



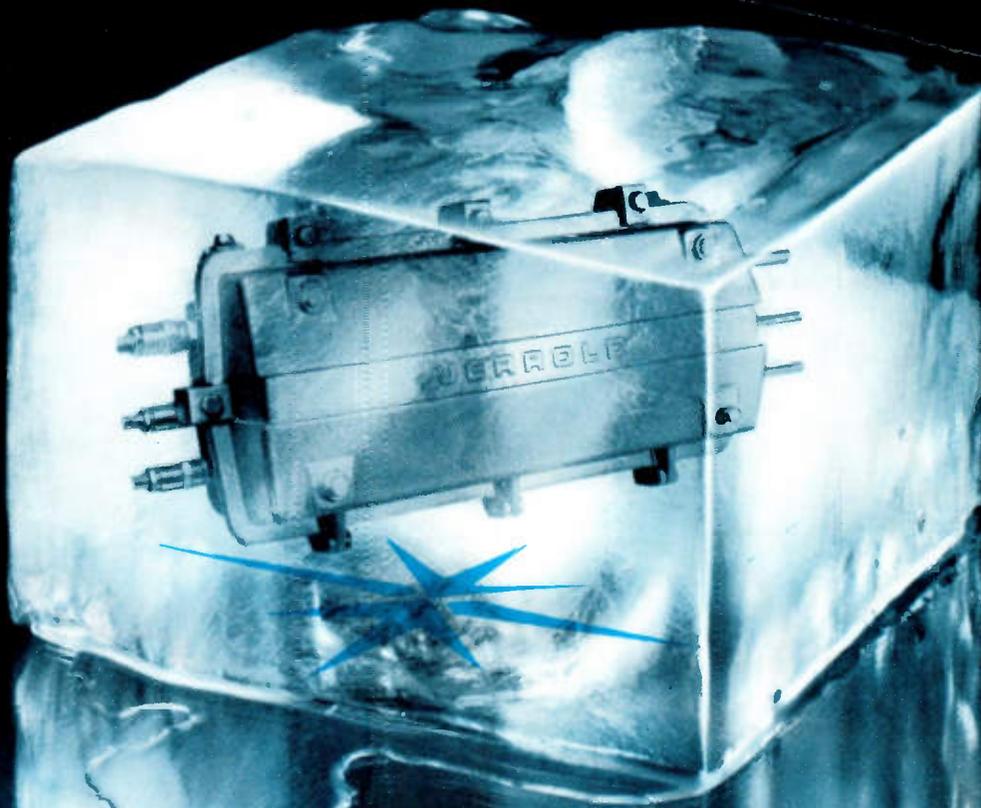
# *TV Communications*

The Professional Journal of Cable Television



**Emphasis on Cablecasting**

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- Aluminum thermal finger inserts ■ Integrated AGC circuitry



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## IN THIS ISSUE

### **CATV; Our Changing Society**

The role of electronic communications in our society is changing dramatically, as well as growing by bounds. Beginning on page 34 of this issue, veteran cable television executive John P. Campbell analyzes the future of CATV as a community communications artery.

### **Cablecasting Survey**

Starting on page 37, read the results and analysis of TVC's National Cablecasting Survey. Information supplied by hundreds of system operators forms the backbone of this most informative article. How much local programming is presently being done by how many systems? What kind and how much equipment are cablecasters using or planning to use? The TVC staff has prepared conclusive data on these and other major questions concerning CATV programming operations.

### **Utilizing Free Films**

In this concise discussion, Robert Finehout of Association Films, Inc. presents ideas for utilizing free "sponsored" films on your community service channel. Beginning on page 45, the author briefly describes not only the type and variety of free films available to cable systems, but also the basic requirements for initiating such a programming service.

### **Studio Equipment Guide**

For a comprehensive reference guide to cablecasting studio equipment, see the special section starting on page 46. Complete manufacturer's data is included on cameras, VTR's, film chains, mobile studios . . . you name it.

### **Head-End Processing Techniques**

Gay Rogness treats the subject of heterodyne versus demodulator-modulator head-end processing, starting on page 75 in the CATV Technician's Section. This is a most timely look at the characteristics of the alternative methods of signal processing.



**ameco**

# TV Communications

The Professional Journal of Cable Television

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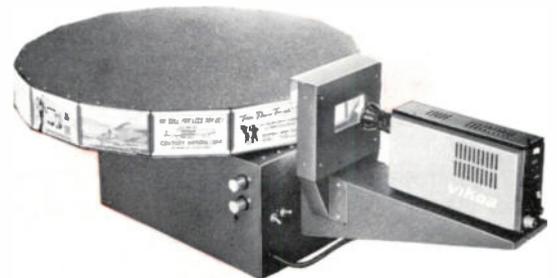
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# The TVC Viewpoint

## EDITORIAL



### The Secret Weapon

Listen to the conversation when a group of cable operators get together and you'll get the impression that they have problems. Invariably, talk shifts to one or more of a long list of worries: copyright liability, top 100 market rules, Second Report and Order restrictions, public utility regulation, telephone company relations — and so forth.

The issues are numerous and complex. Easy answers are non-existent. But CATV people are optimistic by tradition and doggedly determined to find liveable answers to their common problems.

Conventional, obvious remedies are being applied. Meetings between copyright interests, broadcasters and a National Cable Television Association committee are being held. Lawyers are appealing to the Supreme Court in the United Artists case. The NCTA staff and numerous individuals are doing their best to win the sympathy of key legislators. And, of course, the slow battle for fair treatment is being painfully waged along the "Maginot Line" of the Federal Communications Commission.

Will these efforts suffice? Perhaps. But *perhaps* is hardly good enough where the fate of a vital enterprise is at stake!

It seems to us that cable television operators had better be prepared to use their *secret weapon*, the sleeping giant called *Public Opinion*.

Although seemingly alone in their defense against the enemies of cable television, the system owners are actually backed by a vast militia of TV viewers. These ten million citizens are, in fact, the only real allies that CATV can count on "when the chips are down." And no one should doubt their potential. They can do what the lobbyist cannot do . . . what the court may fail to do . . . what the FCC will not do.

These television viewers can bring telling pressure on the Congress to protect their freedom of choice in the television field — and to preserve the free enterprise business which has given them that choice.

Fred Ford and Wally Briscoe caution against a repeat of the grass roots write-in campaign which dumped roughly a million pieces of mail on the Congressional doorstep early in 1966. Okay — we'll buy that reasoning. Handling and answering a deluge of mail from constituents could be an irksome burden for lawmakers and might evoke more resentment.

However, if other courses should fail, grass roots support should be involved without hesitation — whether or not the secretaries on Capitol Hill are overworked! After all, if it were not for various forms of influence being brought to bear by other private interest groups, CATV wouldn't be fighting mortal battles on all fronts.

How and when should support from individual citizens be utilized? Only prudent industry leadership can make that decision when the crucial time arrives.

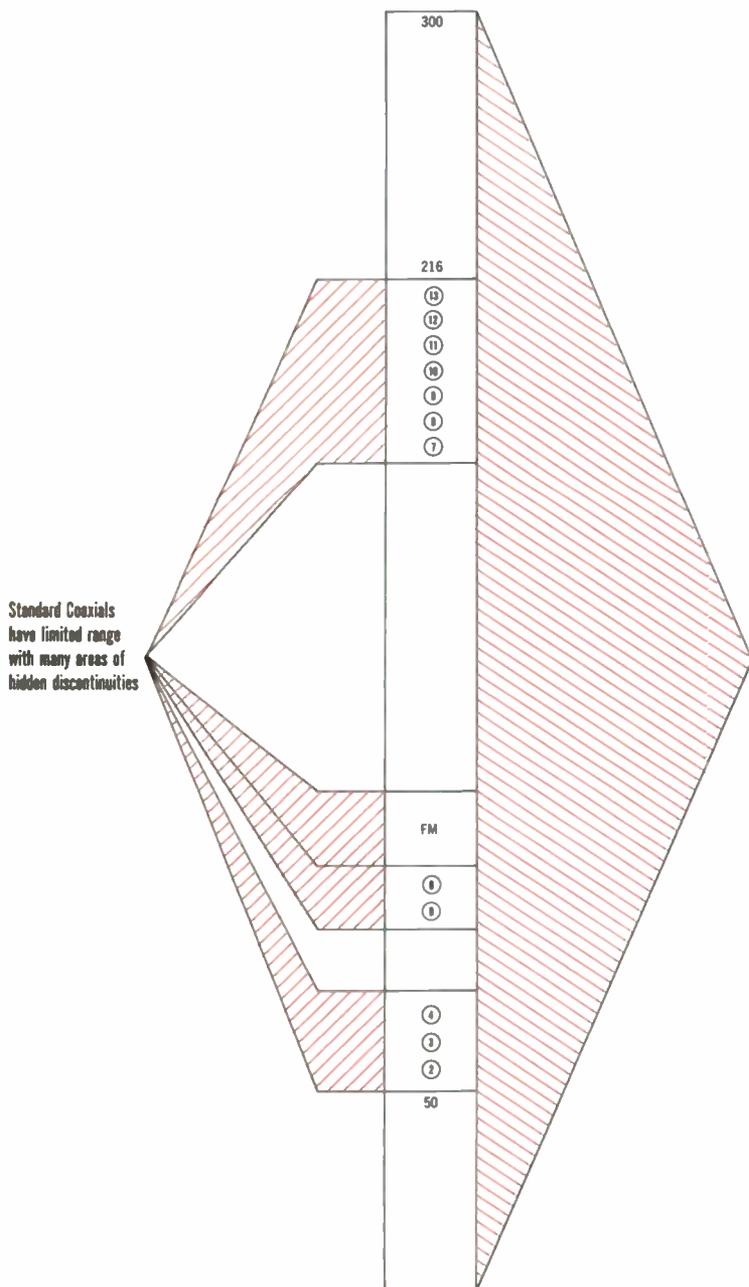
The critical need right now is for every cable owner and every system manager to see that he actually *has* the good will and respect of his subscribers. Why should customers of an old run down CATV system "go to bat" for the system operator?

Are elected officials in your town fully aware of the indirect contribution which you make to the community by making it a more enjoyable place to live? Or have disagreements with officials or community leaders created a sizeable group who would be glad to see your demise? (Such instances are not unheard of.) In short, do you fully *deserve* the support which you may be forced to seek from your customers?

Don't wait for emergency meetings and crash programs. Cultivate the kind of relationship with your customers that will bring them to you spontaneously. There is a strong probability that you'll need their help.

*Stan Searle*

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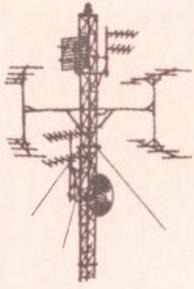
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## CATV Industry PERSPECTIVE

Cable operators can anticipate indefinite delays and generally harsh treatment from FCC, if present trend continues. Recent reversal of itself by FCC on previous waiver decisions may be harbinger of new, tough line toward CATV. Five months after granting permission to Telerama, Inc. to distribute Youngstown signals in 14 communities (Cleveland suburbs) the Commission changed its mind and ordered a hearing in the matter. The FCC also backed out of its previous commitment to let Lorain (Ohio) Cable TV, Inc. bring in Toledo signals. A hearing was set in that case, also.

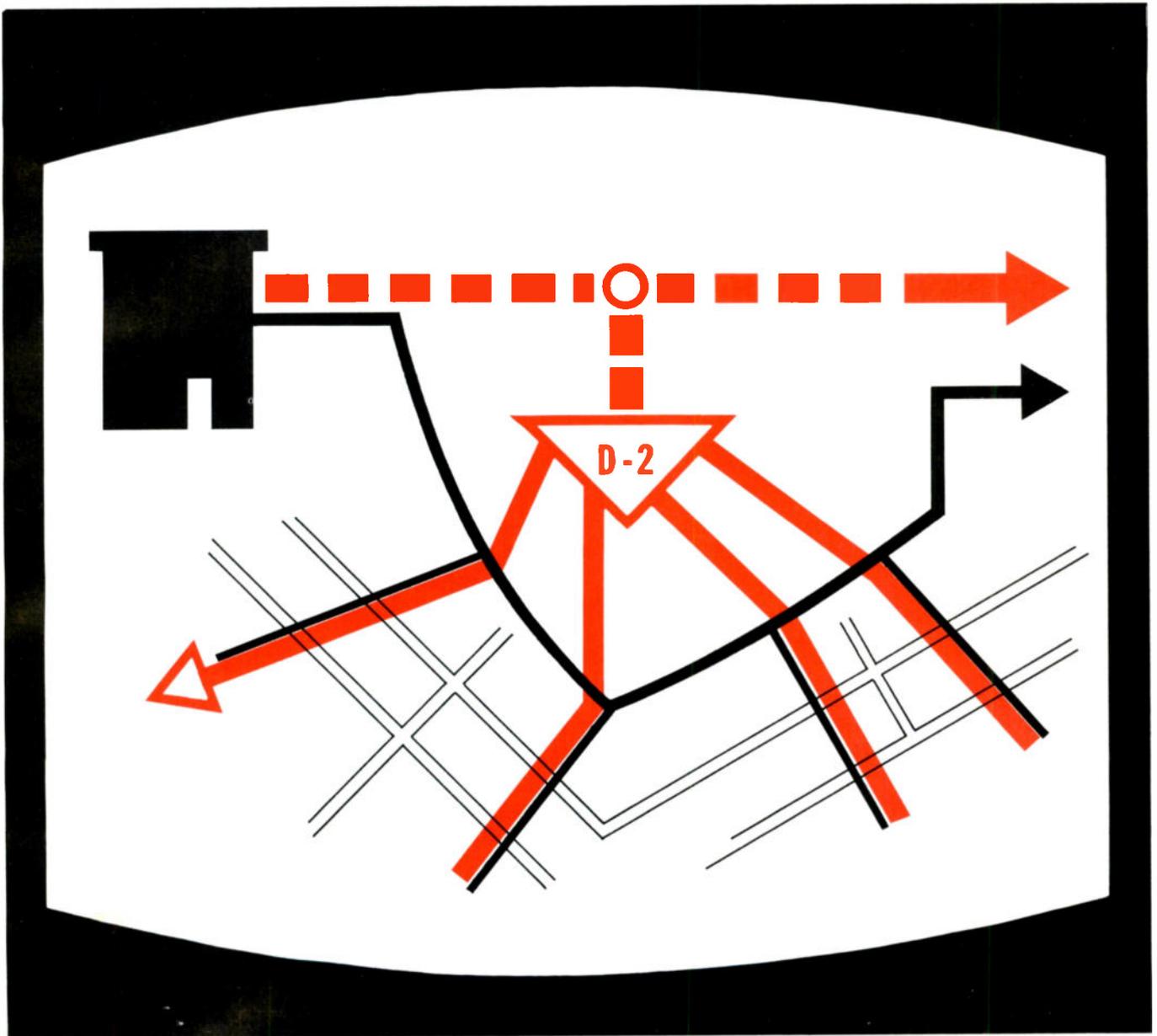
Cancellation of the waivers previously granted to the systems followed a request made by United Artists Broadcasting. The request was made one day after the delegation from the Association of Maximum Service Telecasters met with four FCC Commissioners on May 9. The vote to reverse the previous decision and cancel the waivers was 4-2. The Commissioners who voted for the cancellation of waivers were Hyde, Cox, Lee and Johnson, the same four who had visited with the AMST officials. Unless this is a coincidence, it would appear that cable operators can expect less than impartial treatment of waiver requests by the FCC majority.

The FCC & AMST Railroad could be headed for derailment over recent charges of unlawful ex parte presentations by AMST in the Multivision Northwest, Inc. case. Attorney Robert D. L'Heureux has filed a petition with the U. S. Court of Appeals for the Fifth Circuit, asking reversal of the FCC's self-exoneration on the ex parte charges. The Multivision appeal makes a strong case and would appear to have a very good chance of success.

If the court responds with requested relief, the FCC will be instructed to enforce the rules against ex parte presentations and to order a full evidenciary hearing into the FCC visit by Association of Maximum Service Telecasters' delegates Jack Harris, Lester Lindow, Wrede Petersmeyer, Laurence Richardson and Ernest Jennes. AMST and the companies and individuals involved could be disqualified from further participation in the restricted proceedings on Multivision's waiver request.

Unpleasant news for system operators using direct mail techniques for subscriber promotion programs. Increase in postal rates is now close to a certainty. Increase will be greatest in Third Class mail tariff, passing an increasing share of the Post Office Department's financial burden on to commercial concerns utilizing bulk mailings. Other classifications of postage will also rise substantially.

Pace of copyright negotiations seems to suggest that compromise solution may still be a year away. Some "progress" has been reported by NCTA president Fred Ford--but talks are only establishing the ground rules at this point. Caution is the watchword for all parties. So don't look for early results. Congress won't act as long as talks continue and hopes for a negotiated fee schedule remain alive. Of course, the lawmakers will eventually draft a law of their own wording, but not until the industries involved--copyright owners, cable television operators and broadcasters--have had their say.



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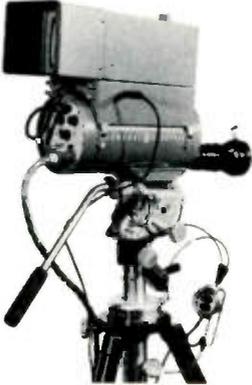
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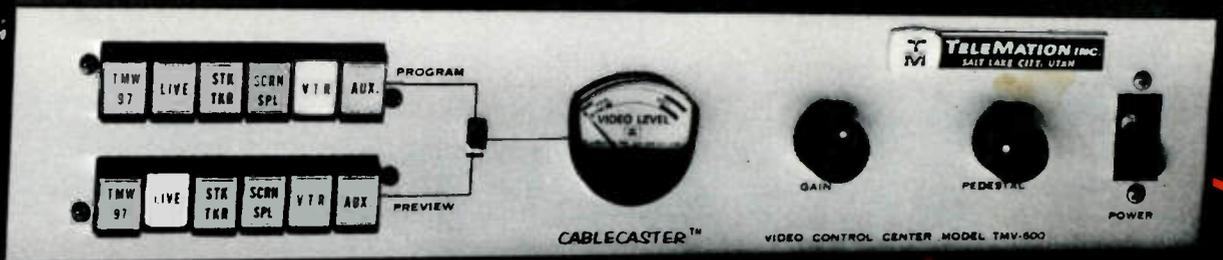
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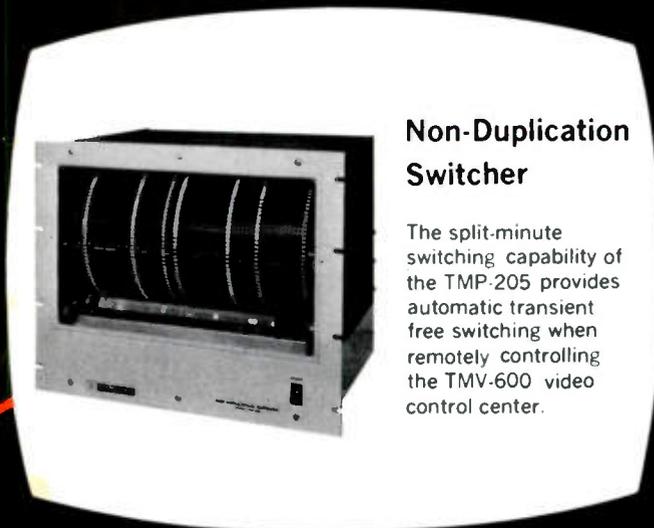
## Video Tape Recorders



The "VTR" output of the TMV-600 can be switched to either preview or program switcher buss, permitting recording sessions without disturbing "on-air" operation. Video outputs of each VTR connect to separate switcher inputs.

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## CATV MANAGEMENT CORNER

### Mixing Health and Success

Once, as a well-to-do businessman was being laid to rest, one of the mourners remarked to another how sad it was that good old George had to go to such an early grave. "Yes, it is too bad," said the other, "but how many of us can be as successful as George was?" Obviously, the price of success needn't be so high. Yet three out of every four businessmen today are living twenty-five to fifty percent below their maximum efficiency. Here are a few pointers on how to be healthy though successful:

*Enjoy your work.* The bigger percentage of your life is devoted to business — forty years for the average man — so why not enjoy your work and the people with whom you work? Your attitude toward each sets the atmosphere for subordinates and affects your image in the community.

*Analyze your job.* Look at yourself objectively. Is your present pace too fast or your work load too heavy? Are work tensions making you nervous, irritable and quick to blow your top? Start now to slow down. Budget your time as you do your finances.

*Keep your home problems and office problems separate,* for others' sake as well as your own. Home problems have little place at work. Your employees have their troubles too, and shouldn't be burdened, even indirectly, with yours.

*Look on the positive side.* Like the medical student who "suffers" the diseases he studies, you may be prone to anticipate everything that can possibly go wrong in your business. Stop fretting over minor crises. Learn to accept the things you can't change; do something about the things you can change; and *learn the difference between the two.*

*Stop worrying about your health: do something about it.* Upon examination, seventy-five percent of executives usually have some symptoms or ailment about which they are concerned. After examination, only one-third of this group are found to have any significant trouble. Yet it is important to note that the concern which fifty percent of these executives expressed affected their productivity as much as though they had actually been sick.

*Live intelligently.* It is difficult to maintain a healthy mental attitude toward your job, your subordinates and your superiors if your physical machinery is not in good operating condition. Intelligent living habits do much to assure the smooth functioning of your system.

*Watch your weight.* Over-nutrition in this country is a far more menacing problem than malnutrition. You needn't entirely forego the joys of eating. All you must do is control the quantity, and, if you are overweight, change your eating habits for good.

*Get more rest.* Everything mechanical requires rest to extend its productive life, and your body is no exception. It requires adequate sleep for real rest and relaxation. Learn to relax for at least an hour before bedtime. Put aside your worries and let your body unwind. Don't underestimate the value of a yearly vacation either.

*Get more exercise.* If you are an average businessman, you undoubtedly are not getting nearly enough exercise. Try to take a fifteen minute walk three times a day. Walking done on the job doesn't count; even though your muscles are getting a workout, your mind is intent on the business at hand.

Learn to perfect the art of living and enjoying life while being successful and productive at the same time.



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# FINANCIAL REPORTS

**H & B American Corporation**, claimed to be the world's largest owner and operator of community antenna television systems, declared its fifth consecutive semi-annual dividend it was jointly announced last week by William M. Jennings, chairman of the board, and Harold R. Sugerman, president. The semi-annual dividend of 12-1/2¢ per common share will be payable September 15, 1967 to stockholders of record of September 5, 1967. The company is listed on the American Stock Exchange.

**Anaconda Company** reported per share earnings of \$1.22 for the quarter ending June 30. Net income for the period was \$26,778,000 with sales and revenues at \$290,413,000. Per share earnings for the same period last year (adjusted to reflect a two-for-one stock split in May, 1967) were \$1.66. Net income for this period was \$36,271,000 with sales and revenues at \$319,539,000. Per share earnings for the six-month period ending June 30, were \$2.87, with net income at \$62,785,000 and sales and revenues of \$599,471,000. This compares with per share earnings of \$2.84 (adjusted to reflect the two-for-one stock split in May of 1967) for the same period last year. Net income for that period was \$62,294,000 and net sales were \$600,435,000.

**TelePrompTer Corp.** reported per share earnings (based on net income from operations) of \$.14 per share for the six-month period ending June 30, 1967. This compared with per share earnings of \$.28 for the same period last year. Revenues were \$3,445,555 as compared with \$3,349,677 last year. Net from operations was given as \$120,428 as compared with \$231,714 last year. Other income (representing gain on the sale of part of the stock of a subsidiary, net of applicable taxes) was given as \$556,633 as compared with \$441,253 for the

same period last year. TelePrompTer reported a net income of \$677,061 for the 1967 period as compared with \$672,967 last year. This is equal to \$.80 a share in 1967 and \$.82 a share in 1966.

**Scientific-Atlanta, Inc.** reported that consolidated sales were \$12,717,702 for the fiscal year ended June 30, 1967, up 10% from \$11,516,759 reported for the previous year. Net profit for the period was \$591,695, up 8% from the previous year's \$549,580. Both sales and net profits for the year were the highest in the company's history. Earnings per share were \$.90, compared with the previous year's \$.86. Prior year's figure has been adjusted for a 33-1/3% stock dividend distributed in September, 1966. It was also announced that the Board of Directors has authorized a split-up of its common stock to be effected by a one-for-five distribution (20% stock dividend) to stockholders of record September 11, 1967. Distribution will be made on September 26, 1967 by the company's transfer agent, the C & S National Bank.

**Ampex Corp.** reported share earnings of \$.22 per share based on a net income of \$2,072,000 and sales of \$52,749,000 for the quarter ending July 29, 1967. Per share earnings for the same period last year were \$.20; net income was \$1,880,000; sales were \$46,212,000.

**General Telephone of California** reported a net income of \$12,285,000 for the six-month period ending June 30, 1967. Operating revenues for the period were \$123,694,000. These figures compare with a net income of \$13,738,000 and operating revenues of \$117,293,000 for the same period in 1966. General Telephone's 12-month report showed a net income of \$28,391,000 with operating revenues at \$246,928,000. □

## Calendar

**OCTOBER 5-6.** The Kentucky CATV Association will hold its annual fall meeting at the Continental Inn in Lexington, Kentucky.

**OCTOBER 9-10.** NCTA Regional Meeting at Philadelphia, Pennsylvania in the Warwick Hotel.

**OCTOBER 11.** The Pennsylvania Community Antenna Television Association will hold its annual meeting in Philadelphia, Pennsylvania at the Warwick Hotel. For further information contact William S. Jackson 814 238-5051.

**OCTOBER 16-17.** NCTA Regional Meeting at Atlanta, Georgia in the Regency Hotel.

**OCTOBER 19-20.** NCTA Regional Meeting in Cincinnati, Ohio at the Netherland Hilton.

**OCTOBER 23-24.** NCTA Regional Meeting in Minneapolis, Minnesota at the Raddison Hotel.

**OCTOBER 26-27.** NCTA Regional Meeting in Kansas City, Missouri at the Prom Sheraton.

**NOVEMBER 5-8.** The National Association of Educational Broadcasters will hold its 43rd annual convention at the Denver Hilton in Denver, Colorado.

**NOVEMBER 9-10.** NCTA Regional Meeting in Dallas, Texas at the Marriot Hotel.

**NOVEMBER 13-14.** NCTA Regional Meeting in San Diego, California at Vacation Village.

**NOVEMBER 16-17.** NCTA Regional Meeting in Portland, Oregon at the Portland Hilton.

**NOVEMBER 28-29.** The NCTA Executive Committee will meet in Washington, D. C.

**JANUARY 12-13.** The Rocky Mountain Cable Television Association will hold its annual meeting at the Holiday Inn in Albuquerque, New Mexico.

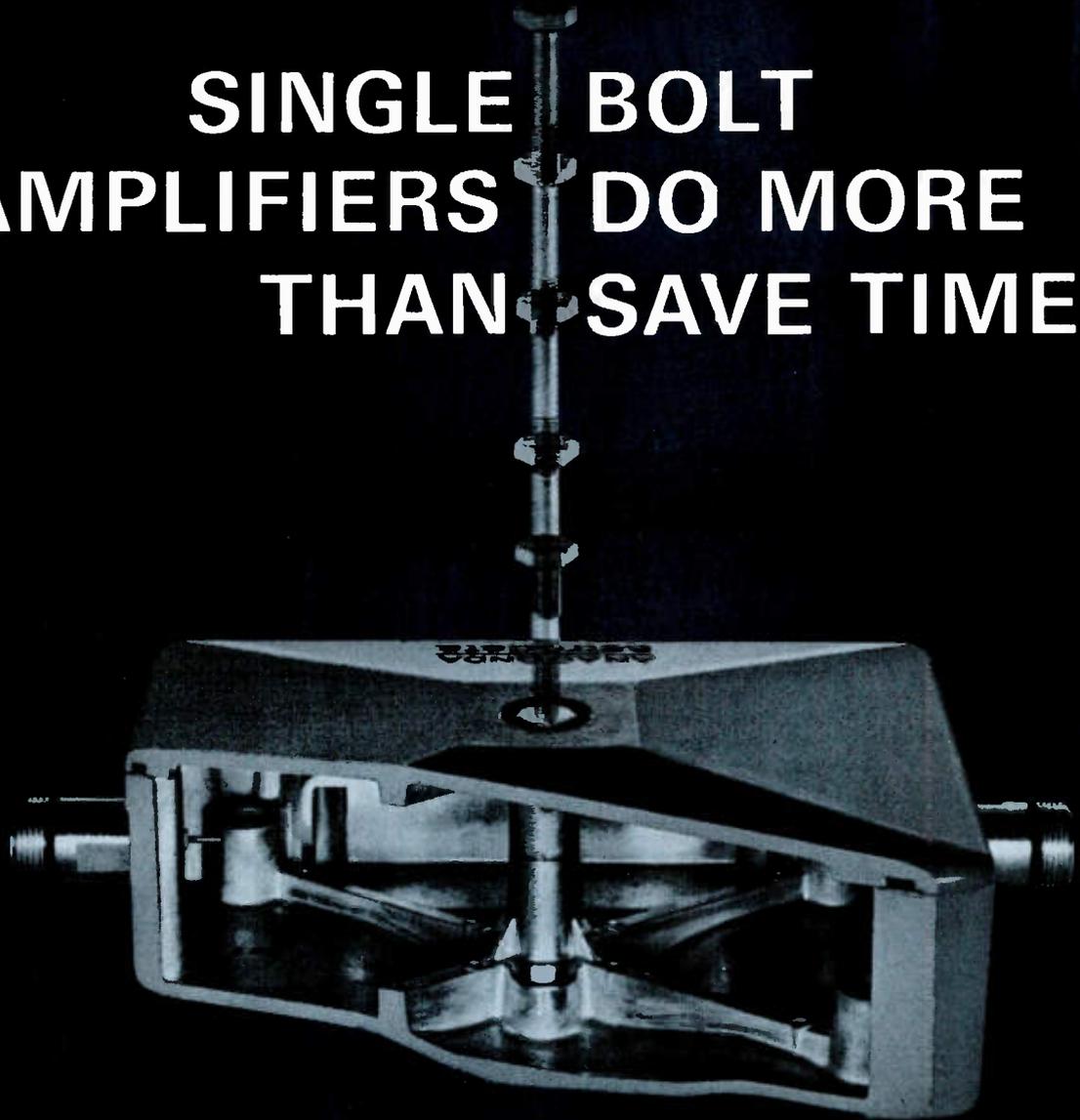
**JANUARY 22-23.** The NCTA Executive Committee will meet in Washington, D. C.

**MARCH 18-20.** The NCTA Board of Directors will meet.

**MARCH 24-26.** The Southern CATV Association will hold its spring meeting in Atlanta, Georgia at the C-llaway Gardens.

**MAY 7-8.** The NCTA Executive Committee will meet in Washington, D. C. □

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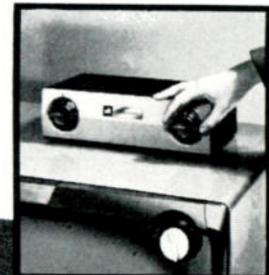
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# Late News

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## **CABLECASTERS AND BROADCASTERS MEET**

Cablecasters and broadcasters, as expected, did not solve any problems when they met informally in Washington September 14 on copyright and other problems. They did achieve some "understanding" however and began to formulate an approach to the many problems they face.

After the 35-man meeting, co-chaired by Alfred Stern, immediate past chairman of the NCTA and George Hatch, President of KUTV, Salt Lake City, Mr. Hatch indicated that a three-part copyright strategy was visualized. The proposed strategy would break the issue down into three basic areas including legislation, regulation, and direct contract negotiations, thus substituting a three-pronged approach for the single concern with legislations now before congress.

At the meeting six subcommittees worked on specific related problems including exclusivity and distant signals, origination, carriage, economic impact study, license fee collection procedures and rate schedules and AM-FM radio implications. The group met together in the morning, then went into the subcommittee meetings and returned later to trade ideas as a body. They agreed to exchange reports by mail and to schedule further meetings in three weeks.

Although trade associations had nothing to do with the meeting officially, the NCTA and National Association of Broadcasters did send non-participating observers to the subcommittees. "We are all here as individuals," Mr. Hatch explained, adding that the exchange on problems was facilitating by not being sponsored by either official body.

Working tools at the sessions were Section III of copyright legislation in Congress and questions developed at a recent meeting with the Register of Copyright of the Library of Congress.

In a wire to Mr. Hatch, Vincent Wasilewski, president of the NAB was careful to point out that the ad hoc meeting "was not NAB-sponsored . . . and that the broadcasters present did not represent an NAB position." He further noted that "NAB will have staff observers at the forthcoming meetings of the subcommittees," and that the original understanding between Mr. Hatch and Mr. Wasilewski was "that the subcommittees appointed by you, which would be composed of broadcasters some with CATV interests — were to meet independently of those appointed by Mr. Stern; and that following these meetings, depending on the results achieved, joint meetings might be scheduled between groups."

Despite the lack of official NAB support, broadcasters and cablecasters alike felt the meeting resulted in a step in the right direction for CATV-broadcaster relations.

## **FCC DENIES EX PARTE CHARGES**

Although the FCC has denied charges by American Television Relay, Inc. of ex parte, or off-the-record, discussion of its microwave applications by the Association of Maximum Service Telecasters, it gave a little ground on the company's petition for special relief. The petition was denied, but the Commission found merit in American's request that disclosure be made by AMST of its television station members who had advance knowledge of May 9th meeting with the FCC and of the extent to which they helped plan it. AMST is being asked to furnish this information in ten days.

On the ex parte question, the FCC said that the May 9th meeting "involved no discussion of the American Television Relay application proceedings as such but were limited throughout to the discussion of overall policy." Under FCC rules, interested persons are prohibited from making ex parte presentations to decision-making personnel concerning an application proceeding at any time after a petition to deny the application has been filed. The FCC said that dis-

# Late News (Continued)

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cussions of general questions of policy may appropriately be held with industry representatives such as AMST which is not a party to the American TV Relay application proceedings.

American has pending applications to microwave Chicago and St. Louis TV signals to CATV systems in Kentucky and Alabama and Los Angeles signals to Texas.

## OPERATOR WINS ROUND WITH UHF CONCERN

Courier Cable Co., Buffalo, N.Y., CATV operator, has won a round in the FCC fight that a local UHF applicant, Ultravision Broadcasting Co., has been waging to prevent extension of the Courier CATV system.

The FCC Review Board refused to upset a hearing examiner's ruling June 1, 1967, denying Ultravision a subpoena to get the names, addresses and telephone numbers of Courier's subscribers. Ultravision wanted to survey frequency of viewing stations in and out of Buffalo and the quality of CATV reception.

Affirming the examiner's denial, the review board said Ultravision waited too long to seek the subpoena. It added that the UHF applicant could have found Courier subscribers on maps in the proceeding record or by looking for cable droplines. Pending the outcome of the hearing, Courier may continue with present cables but may not extend them.

## TRIANGLE DISTANT-SIGNAL DENIED BY FCC

Triangle Publications, Philadelphia, lost by a close vote on its bid to bypass the embargo on bringing distant signals to big markets when the FCC denied Triangle's petition 4-3. Now Triangle lawyers will seek reconsideration of the petition for an experimental operation in Philadelphia suburbs "so the proponents of CATV can have a proper forum on this."

Triangle, through its subsidiary, Suburban Cable TV Co., proposed to provide service from local stations and from New York independent and educational VHF's. Suburban's thesis was that the impact of CATV on UHF can only be accurately evaluated in a market containing well established operations such as Chester, Montgomery, Bucks and Berks counties in Pennsylvania covered by Philadelphia's three UHF's. Two of four systems would carry local signals only and two would have both local and the distant signals from New York. It would be a three-to-five year experiment.

As a result of the action a strong champion for CATV on the Commission was revealed and at the same time added weight was given to the copyright issue facing CATV. Cable forces picked up a significant vote, the one putting Commissioner Nicholas Johnson in the cable camp. Commissioners Loevinger and Bartley completed the dissenting votes. Chairman Rosel Hyde led the concurring votes.

## ROHN SUES UNIVERSAL TOWER

Rohn Manufacturing Co., manufacturer of towers for CATV and other applications, has instituted a suit for unfair competition and trademark infringement against Universal Tower Company. Universal is a co-partnership consisting of Franklin D. Crews, Arcel D. Smith and E. J. Walsh, also doing business as Midwest Cable Company and Kentuckiana Tower Service. Rohn is seeking an injunction and damages and alleges that Universal Tower has appropriated and copied trademarks and advertising literature. The suit has been filed in the United States District Court for the Southern District of Indiana, Evansville Division.

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## California Association Blasts FCC

The Federal Communication Commission's "Inquiry Into Developing Patterns of Ownership in the CATV Industry" got a resounding reaction from the California Community Television Association, last month, and the western CATVers did not mince words. Headed by Bill Hargan, the California Association is one of the strongest and most active of state CATV organizations. The reply was authored by Walter Kaitz, general counsel and executive secretary for the association.

In the filing, Kaitz suggested that the "guidelines being established" by the FCC could better be resolved "within the creative interplay of the free enterprise system." These guide lines, he pointed out, "are not matters which should be, or can be, ordained in advance by a Federal agency."

The filing added that, "The right to construct a wired communication system, whose wires cross public streets and thoroughfares, is currently a matter within the exclusive province of the county or municipal government having jurisdiction over such streets and thoroughfares. We believe that such local franchising by government bodies is the most effective means of insuring CATV service which is responsive to local needs and requirements.

"Indeed, we contend that subjects such as ownership of CATV, origination of programs, and determination of program content are constitutionally beyond the jurisdiction of the Commission, with or without action by Congress.

"The Commission's power to determine who may use a particular broadcast frequency stems from the physical fact that there are not enough frequencies available in the spectrum to go around. From this

scarcity factor sprang the Commission's licensing power.

"To the extent that such licensing power involves an inherent abridgment of freedom of speech, the courts have accepted it as being necessary to avoid chaos in the broadcast spectrum. In CATV, however, there is no occupancy of the radio spectrum (except for microwave situations, which are not treated here), and the need for the allocation and licensing of frequencies does not exist. Absent the scarcity factor and absent the licensing power, the Commission has no power whatever to determine who shall own a CATV system or to determine what information he may or may not originate or disseminate over it. Since it does not occupy the radio spectrum, CATV is as fully protected by the First Amendment as a newspaper, a magazine, or a soap box.

"In light of the foregoing, the Association respectfully contends that the Commission has no jurisdiction or power whereby it could deny anyone the right to engage in the CATV business, regardless of that person's ownership of a concentration of other mass media.

"As we understand it, the Commission does not contend that it could prohibit anyone from owning a newspaper, or a magazine, or a theater chain.

"The basic intent of the multiple ownership rules has always been to insure that the public will receive the maximum number of views and opinions from the widest possible sources. CATV, which is basically a multiple reception service, brings to a community a wide variety of entertainment, news and opinions. Such diversification strengthens rather than weakens the policies underlying the multiple ownership rules.

"The Association fully appreciates the Commission's concern with any trend or development which could ultimately result in concentration of control of mass media in one or more broadcast licensees to a degree that would be contrary to public interest. For the present, however, we respectfully point out that the contribution of broadcast licensees to the development of CATV has been healthy and constructive. There is nothing in the Communications Act, nor any other law which prohibits a broadcast licensee from engaging in any legitimate business endeavor. Certainly there is no evidence to date that such joint ownership has any negative implications with respect to the public interest."

## Colorado Springs Grants Franchise

Vumore-Video Corp., a cable firm headed by CATV pioneer Bill Daniels, is the recipient of the much-sought-after, franchise for Colorado Springs, Colorado. The company, owned 50% by Vumore Company of Oklahoma City, 33% by Daniels & Associates of Denver, and 16% by a group of Colorado Springs businessmen, outbid two other applicants, winning the grant by a 9-0 vote of the Colorado Springs city council.

The winning bid was based on annual gross and offered the city 5% of the first \$250,000; 10% of the next \$250,000; 15% of the next \$200,000; 20% of the next \$200,000; 25% of the next \$200,000; 30% of the next \$200,000; and 35% of everything over \$1,300,000. Average payments to the city, according to Daniels, will average about 13½% of gross receipts.

In projecting growth figures for the system, Daniels said that Colorado Springs is growing at a rate of 10% per year. With a present population of 70,000, he anticipates the plant will double in size in seven years. He stated that, "Under our present projections, and what we think the property will do, we are to pay the city an average of 13½% based on 60% saturation in seven years."

Monthly rates are set at \$4.45 for 12 channels and \$4.95 if and

when the system goes to 20 channels. The city ordinance will not allow consideration of a rate increase until two years after the system is completed. There are no minimum taxes involved in the arrangement, but the Daniels group gave the city \$50,000 in prepaid taxes as a part of their bid.

Construction of the 300-mile system was scheduled to begin immediately and will be 100% underground — indicating an estimated total cost of around \$2 million for the entire plant. Vumore-Video will also build a separate loop and donate three channels for closed circuit use by the Colorado Springs

school system.

Ken Erickson, a resident of Colorado Springs and chairman of the board of Kaman Nuclear, is chairman of the board of Vumore-Video. Bill Daniels is president, and Bob Clark of Vumore in Oklahoma City is vice-president.

## San Diego Hearing Nears Conclusion

Proposed conclusions have been filed in San Diego, California, on the importation of Los Angeles television signals by seven CATV systems operating in that area — a subject long pending before the FCC, and now the cause for considerable concern on the part of the Commission. The case has for the last few months been under the scrutiny of critical observers across the nation, for it is the same case that earlier this year saw a landmark legal decision, in which the Court of Appeals in San Diego ruled that the FCC has, in essence, no authority to regulate CATV. The decision is currently under appeal in the U.S. Supreme Court. The San Diego court acted on an appeal by the systems following an FCC order to stay their expansion; however, the Commission hearing phase of the complex case has continued.

Petitioner in the case is Midwest Television, Inc., licensee of KFMB-TV in San Diego. The CATV systems involved are: Mission Cable TV Inc. in El Cajon, Southwestern Cable Co. in San Diego, Pacific Video Cable Co. in El Cajon, Trans-Video Corp. in El Cajon, Rancho Bernardo Antenna Systems Inc. in La Jolla, Escondido Community Cable Inc. in Escondido, and Vista Cablevision Inc.

Among the proposed conclusions was a filing by the Commission's Broadcast Bureau. The bureau, in reviewing the situation of television station KAAR, an independent UHF on channel 39, noted that, "We have concluded that unlimited CATV expansion would result in serious impact on the San Diego UHF station. There is a likelihood that it would result in no independent stations at all

in San Diego. This would mean that most of the homes not willing or able to subscribe to CATV would be able to receive only three network affiliates and a Tijuana Spanish speaking station."

The FCC bureau said "the only solution which appears equitable to all parties under the circumstances, would be to remove all restrictions upon the further expansion of the CATV systems in the San Diego area, upon the two conditions as follows: (1) That no San Diego CATV system shall carry the distant signal of any Los Angeles independent television station; and (2) That no CATV system originate any programs for carriage on its system. The term originate shall include local programs originated by the CATV system as well as all feature film, sports events, syndicated programs purchased or acquired by the CATV systems."

The CATV argument was summed up by Fletcher, Heald, Rowell, Kenehan & Hildreth, the Washington law firm that filed on behalf of five of the systems. The filing concluded: "(1) The present operations of CATV systems in the San Diego area have not been shown to have any effect on the local television stations; (2) That CATV, even if uncontrolled by the government, will be limited by practical economic factors to approximately one-third of the households in the San Diego area; and (3) That there is no valid and persuasive evidence that CATV operations of this nature, operating in accordance with the general CATV rules, would threaten the economic viability of any present or potential television station in San Diego." The filing argued for

no conditions or limitations on CATV operation there.

The proposed conclusions were filed for the consideration of an FCC hearing examiner, who will issue an initial decision on the case, which in turn can be appealed to the Commission and later, if necessary, taken to court.

## Jerrold, General Instrument Announce Merger Plans

An agreement in principle to the merger of The Jerrold Corp. and General Instrument Corp. has been announced jointly by Robert H. Beisswenger, Jerrold president and Martin H. Benedek, chairman of General Instrument. Emphasizing the companies' "confidence that CATV represents a market with outstanding growth potential," the joint statement noted that, although the respective boards had agreed in principle to the corporate marriage, the merger is still subject to approval by stockholders.

The merger would see the union of Jerrold's considerable CATV manufacturing capabilities and system holdings with General Instrument's "substantial" background in integrated circuitry, the technology that most CATV engineers feel will eventually replace solid state. Based in Wilmington, Delaware, General Instrument manufactures electronic components and equipment, and is noted as the largest producer of television tuners.

The anticipated merger, according to Beisswenger, "Obviously shows the prophetic confidence General Instrument has in the future of CATV. As for the cable television industry, I believe it will benefit immeasurably as a result of this merger."

*(News continued on next page)*

## CATV By-Passes Southern Bell

The city of Lake Charles, Louisiana, emerged as one of the major CATV/AT&T battlegrounds last month, when a pole dispute erupted between city civic leaders, utility pole owners, and two CATV firms. The skirmish got underway when Southern Bell Telephone Company refused to allow KOAK-CATV to attach its lines to the utility's poles.

Both cable firms — Louisiana Cable TV, Inc. and KOAK-CATV, owned by Time-Life Broadcast, Inc. and Ed J. Pendergrist of Lake Charles (Pendergrist owns and operates local radio station KOAK.)— were granted CATV franchises by the Lake Charles city council. Louisiana Cable TV promptly signed a pole attachment agreement with the local Bell affiliate and a Gulf States Utilities, while KOAK-CATV was, in effect, left "pole-less," due to Bell's policy against signing pole agreements with more than one CATV company in the same city. (90% of the utility poles in Lake Charles are shared by the telco and Gulf States Utilities; at the present time, GSU owns 70% of the poles in the city, while Bell owns 30%.)

Louisiana Cable was granted the pole attachment by the two utilities over the protests of KOAK-CATV; however, the Lake Charles city fathers felt that both CATV firms should have the right to place their cables on utility poles within the city. On the other hand, Mayor James E. Sudduth and the city council took a firm stand with Gulf States Utilities and Southern Bell. And at the same time, city attorney Robert McHale came forth with the statement that the GSU franchise with the city did not permit the company to enter into the exclusive contract with Southern Bell, relative to use of the poles on a joint basis. He added that, in that the franchise had been violated, the city could demand that *all* cables, including Southern Bell's be removed from the Gulf States Utility poles.

KOAK-CATV then reminded the city council that Bell was operating in the city of Lake Charles without a franchise — it is not necessary

according to state law, although GSU must, and does, have a franchise to operate — and that the KOAK firm was licensed by the city to operate a community antenna television system. At that point, the city council decided to take the situation in hand and resolve the problem.

An ordinance and a resolution were passed, with the GSU-Southern Bell joint service agreement as the basis for both. According to the resolution, GSU's franchise with the city "may have been violated," because it has allowed Southern Bell to attach its lines without obtaining permission from the city. The resolution stipulates that the city attorney may take appropriate legal action to revoke GSU's franchise and to cause "those who have illegally attached (Southern Bell) to remove their lines."

The resolution also indicates that GSU has allowed lines to be placed on its poles "without compensation to the City of Lake Charles." The ordinance, if passed, would also force all future lines in the city to be placed underground. Within five years all lines "shall be underground," the ordinance says. Ed Hodges, representing GSU, said the cost of such placement is 13 to 14 times greater than placing the lines on poles.

At the end of the meeting, Mayor Sudduth informed GSU, Southern Bell, Louisiana Cable TV and KOAK-CATV that the city administration would avidly enforce ordinances 1020 and 1341, already on the books, which regulate the installation of utility poles. "We intend to enforce these ordinances from now on," Sudduth said.

### Bell Sticks To Policy

The council meeting began with Council President Charles Ware asking GSU and Southern Bell representatives if they had reached any decision on allowing KOAK-CATV to attach its lines on their poles.

Hodges of GSU said, "We will concede to the council's wishes and permit two cables." He indicated,

however, that KAOK-CATV would have to pay the cost of arrangements for the lines on the poles. Hodges said it cost Louisiana Cable TV about \$10 a pole for the 5,000 attachments it has made to the GSU and Southern Bell poles. Costs could be higher for KAOK-CATV since more lines would have to be moved, Hodges said.

Southern Bell's H. B. Cupp then spoke. He said the council was asking his company to "modify a long-standing policy" against allowing more than one line of a type to be placed on its pole. He said, "We intend to adhere to our present policy. We have been called 'hard-nosed.' We will not change our policy," he said. Cupp also said that GSU could not grant rights to KAOK-CATV without Southern Bell's premission.

However, Mayor Sudduth then told KOAK-CATV that the city would permit the placement of poles *alongside* Southern Bell poles, meaning that KOAK-CATV will have cable on Gulf States poles and its own poles throughout the city. Gulf States Utilities attorney Oliver Stockwell later informed the city council the GSU was "ready to work out an agreement with KOAK-CATV to allow attachment of its television cable lines to the company's poles immediately." He said his client would proceed independently of Southern Bell Telephone and Telegraph Company. The pole attachment agreement was signed the next day, and first placement of KOAK-CATV cables on GSU poles took place less than two weeks later.

### Communications Task Force Established

President Johnson, in a recent message to Congress, called for a comprehensive review of the United States' International and domestic communications policy and appointed a high-level government "Task Force on Communications Policy." The President apparently meant to use the medium of his message to Congress only to call attention to the action, for he did not propose legislation.

The Task Force is chaired by  
(Continued on next news page)



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Eugene V. Rostow, Under Secretary of State for Political Affairs, and Vice Chairman is James D. O'Connell, Director of Telecommunications Management. No member of the Federal Communications Commission is on the Task Force, although Commission Chairman Rosel H. Hyde is an ex officio member.

The Task Force was given open-end authorization to investigate all areas of communications policy, but the President made it clear that the real field of interest is communications satellites. The Task

Force has one year to complete its review, a timetable that would seem to preclude extensive reevaluation of all areas of international and domestic communications. The Task Force also may be asked for interim reports, and is supposed to receive the cooperation of the FCC. The President also directed the Bureau of the Budget to restudy the government's approach to communications management with a view toward cutting down duplication and waste. The end result could affect the FCC's structure.

As far as CATV is concerned,

the most specific possibility raised in the Presidential message came with the question, "Are we making the best use of the electro-magnetic frequency spectrum?"

The President is also concerned that any domestic satellite system fit into the international plans, and he directed the Task Force to try to answer the questions: "How soon will a domestic satellite system be economically feasible? Should a domestic satellite system be general purpose or specialized, and should there be more than one system?"

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## Pay TV Gains Support

As the road to nationwide Pay TV grows considerable wider, carefully formulated viewpoints — be they pro, or con — are being proclaimed by interested parties who may in any way be affected by the proposal. Declarations in support of the FCC's plan, which would establish a nationwide over-the-air pay television system, have already been made by the American Federation Labor Hollywood Film Council and the Screen Actors Guild. But the National Association of Theatre Owners has announced plans to solicit a contribution of ten dollars from every theater in the country, in order to raise a \$50,000 fund to fight Pay TV. FCC's hearing on the proposal was scheduled to begin October 2.

Filing in support of the Commission's plans, the Screen Actors Guild stated that the FCC's Pay TV committee "has dealt exhaustively with the possible adverse consequences of subscription television on free television through programming, syphoning and preemption of time, and in its proposed rules has adopted elaborate safeguards against such consequences. We have studied these proposals and believe that they will prove adequate to substantially accomplish their purpose.

"We wish particularly to support the proposed rule against the showing on subscription television of feature-length films which have had general release in theatres in

the United States more than two years prior to their subscription television broadcast. Television showings of the older theatrical motion pictures constitute the backbone of free television programming, and members of Screen Actors Guild earn substantial fees from such exhibitions. It is, therefore, important to them that their source of income be preserved in this area. We believe the above rule will be helpful in accomplishing this end. The prohibition against the showing on subscription television of series type programs with interconnected plot or the same cast, which have become so identified with free television, and the rule against commercial advertising should also aid in preventing audience diversion and maintaining the high quality and potential values of which subscription television is capable."

The filing, signed by national executive secretary John L. Dales, made another point that CATV operators should read with interest: "It is our belief that the existence, side by side, of two competitive systems of television programming will result in a vastly larger television audience with a broader range of tastes and interests. The natural fluidity and curiosity of such audience should more than offset any possible loss to free television of a portion of its present audience. Thus, free television, instead of being adversely affected

by subscription television, will undoubtedly gain from its existence."

## Pa. System Defies City

Bradford (Pennsylvania) TV Cable Company's dispute with the city council finally reached the stage of crisis: cancellation of the cable firm's 10-year franchise. But the action, which culminated after Bradford TV Cable attempted to raise its charges from a low \$3.75 a month to \$5.50, has fallen on deaf ears as far as the cable firm is concerned. Company officials rejected the city's order directing the removal of CATV lines and equipment from city streets on the basis that "the city does not possess the legal power to issue a directive . . ."

In a communication to City Solicitor Francis M. Nash, cable manger William M. Taylor declared that Bradford Cable "does not feel itself obliged to terminate its service or remove its installations in the city." The communication also warned that the cable firm would look to the city for reimbursement of "all damages suffered" due to the interruption of service or interference with the equipment in the city.

The entire problem erupted when Bradford city officials first learned of the proposed rate increases to a segment of the Cable TV company's customers in order to standardize all payments by the end of a five year period. The cable company at that time

threatened the cancellation of service to original subscribers if the rate increases were not accepted by this segment of the company's customers.

According to city officials, the company was notified the proposed rate increases and threats of individual contract cancellations was in direct violation of the 10-year franchise between the municipality and the cable facility.

City officials said the cable company had been notified by letter of the action the city would take if the threats and proposals of the TV Cable company persisted. The letter requested that the company cease and desist from the rate increase proposal and attempts to cancel customer agreements.

### CBS Develops Playback Device

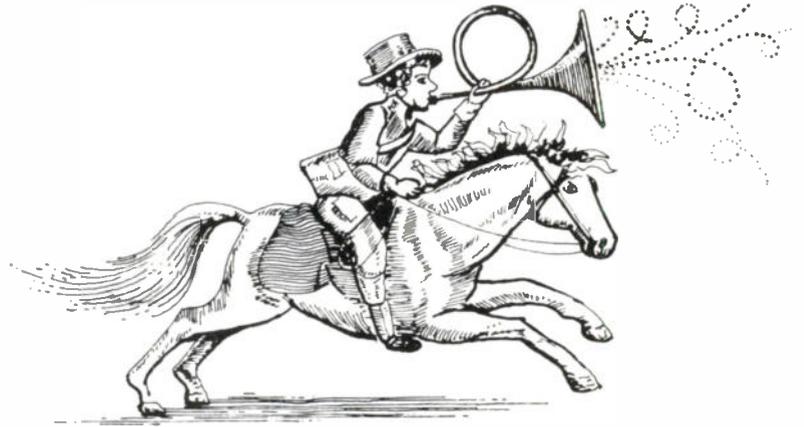
The Columbia Broadcasting System has announced the development of a revolutionary electronic device which not only allows the playback of color motion pictures or other visual material through a conventional television set, but can also be stopped so that a viewer can leisurely read a page from a book on his home screen.

The device, known as "electronic video recording", involves use of a seven-inch cartridge that can be inserted or removed from the playback machine with the ease and economy of the cost now associated with long-playing records of music. The playback machine could be put on top of a TV set and simply connected to the antenna terminals of one or a dozen receivers. It is roughly the size of a kitchen bread box and can now be manufactured for about \$285.

The cartridge, which can be mass-produced readily because a duplicate copy can be made in a matter of seconds, would initially cost from \$7 to \$14, a fraction of the cost of today's magnetic tape recording widely employed in commercial TV.

The CBS device, which is scheduled for world marketing in late 1969 or early 1970, differs from earlier home recording methods in that it can only play back the film cartridge made by a professional concern.

*(News continued on next page)*



## “Here at last is something in the doings of man that corresponds with the broadcast doings of the day and night.”

—WALT WHITMAN  
*Preface to Leaves of Grass (1855)*

We don't know whether Mr. Whitman really had SONY in mind when he penned his preface. But we do know that SONY's remarkable EV-200 Videocorder® system most certainly "corresponds with the broadcast doings of the day and night" when it comes to CATV operations.

The EV-200 is a low-cost, portable, easy-to-operate system with the advantages of systems costing twice as much. Only SONY offers you these exclusive design features: electronic, variable slow- and full stop-motion; "ROTO-COIL" system that uses a rotary transformer in place of the usual slip-ring and brush assembly to end maintenance problems and give you a noticeably cleaner picture.

Other outstanding features of the EV-200 system are: ability to operate with existing CATV systems; use of economical 1" tape; slow tape speed ensuring long tape life; complete tape interchangeability with other EV-200 recorders; weight, only 88 pounds.

Here at last is your answer to reliable, rugged, low-cost local CATV programming.



For complete technical specifications fill out and mail the attached coupon or circle the appropriate number on the inquiry card elsewhere in this magazine

**SONY**  
INDUSTRIAL DIVISION  
516 W. Florence Ave.  
Inglewood, California 90301

SONY CORPORATION OF AMERICA  
INDUSTRIAL DIVISION

Please send me complete specifications on the EV 200 System  
 Send me information on SONY's other Videocorder Systems  
My application is  CATV  CCTV  TV Broadcast

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY/STATION \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

## Network to Try Again

Plans to resume broadcasting have been announced in New York City by James W. Nichols, managing director of United Network The network, which began operation only this year, folded after less than 60 days on the air. A bankruptcy petition was filed June 22 by Nichols, after broadcasting a short-lived late evening show from Las Vegas to 106 affiliated stations since the first of May.

In his recent announcement, Nichols indicated that the network would resume with news and public affairs shows. He pointed out, however, that the network could not resume operations without approval of the Federal bankruptcy referee handling the present proceedings of the previous network. It is expected that the same Texas investors who sponsored the first attempt would back the new start.

Nichols noted that the comeback, if allowed, would be under the direction of Robert Pauley, who recently resigned as president of the American Broadcasting Company Radio Network. Nichols said failure of the first attempt was due because of insufficient advertiser support and the high cost of transmission facilities leased from the American Telephone and Telegraph Co.

Under its new operation, Nichols said, United plans to provide affiliates with 14 half-hour weekly news and public affairs programs.

According to United, this programming will be resumed in three phases: The first phase will be the news and public affairs. The second phase will place the emphasis on sports. The third phase will be to provide entertainment material.

Company officials say that details and target dates for phases two and three are not yet set, but stress the fact that news and public affairs will always receive prime attention.

### AT&T Rate Filing Period Extended

The Federal Communications Commission has granted American Telephone and Telegraph Company more time to file new tariffs called for in a recent FCC decision which ordered the company to cut interstate rates by some \$120 million annually.

The new rates were to be filed by September 1, but the delay was granted, according to the FCC, in order to allow time for a Commission study of recent AT&T petitions that the rate-cut order be reconsidered and modified. However, in making the concession, the FCC noted that the delay "will be of short duration as the Commission is expected to act promptly" on the request for modification of its order.

### FCC Reverses Waiver Decision

Cleveland, Ohio area CATV systems came face-to-face with a reversal of FCC policy last month, when the Commission changed its mind about an April decision and stripped the systems of their distant signals. The systems affected include Lorain (Ohio) Cable TV and the Telerama, Inc. systems in Cleveland Heights, Richmond Heights, South Euclid, Beechwood, Oakwood, East Cleveland, Garfield Heights, Euclid, Highland Heights, Lyndhurst, Bedford and North Randall.

In dealing with the complex Cleveland situation last April, The Commission decided to set the

entire package for a market hearing, but in the meantime agreed to allow the systems to import signals. (Lorain Cable TV planned to carry Toledo and Akron signals, and on the Commission's grant initiated construction — and the Telerama systems have been carrying Youngstown, Ohio UHF stations WFMJ-TV and WYTV.) At this point, the Lorain system has permission to carry WAKR-TV on Channel 49 in Akron, and only Telerama's Oakwood system can still carry the Youngstown signals.

In reversing the earlier decision, the Commission also denied a Telerama petition for reconsideration, which asked that the FCC allow it to carry UHF stations WJET-TV and WSEE in Erie, Pennsylvania, on its systems in Shaker Heights, Warrensville Heights and Warrensville township.

### Copyright Moratorium Sought

The ad hoc copyright committee — still officially described as "informal" — has held a series of meetings in Washington on the CATV question in copyright law with, as yet, no definite result. The meetings revolve around, essentially the hope of the CATV industry for interim legislation to suspend the potential applicability of copyright law to CATV until comprehensive copyright revision legislation is passed by Congress. The meetings naturally also concern the long-range future of CATV as far as copyright is concerned.

A moratorium is being sought in order to ease the legal situation, and there have been indications that Senator John L. McClellan (D-Ark.), chairman of the Senate Judiciary Committee, is willing to back the legislation. But broadcasters and, even more strongly, copyright holders, have indicated an unwillingness to settle for a such a moratorium when they think they now have full copyright leverage. (In the event that the Herlands Decision is upheld by the Supreme Court, the CATV industry would be liable for a rash of law suits and injunctions, all awaiting the passage of the copyright law.)

*(Continued on next news page)*



**Southern Telephone Supply Company**

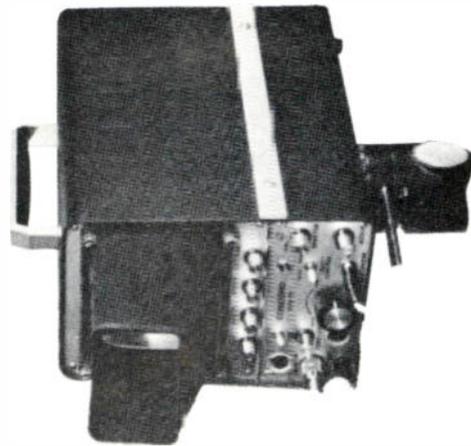
Area Code 404  
Telephone  
636-7501

Office and Warehouse  
3003 N. Decatur Rd.  
P.O. Box 833-Decatur, Ga.

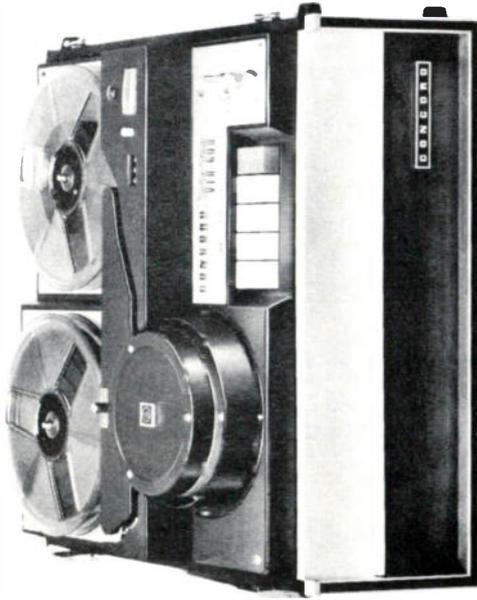
136 Cumberland  
P.O. Box 12142  
Memphis, Tenn. 38112  
Area Code 901, 324-6176

Call on us for CATV supplies and equipment  
we represent the major manufacturers.

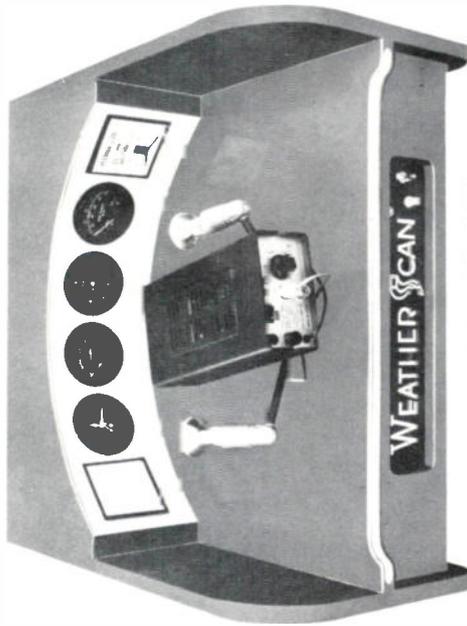
# Great new formula for Low-cost Local Origination:



CONCORD TCM - 20



CONCORD VTR - 600



WEATHER - SCAN II

**\$4140**

The R. H. Tyler Company has an economical solution to local origination programming. And the formula allows maximum reliability of programming at a minimum of cost and equipment. Here's how it works:

Start with the Concord model TCM-20 combination Monitor/Viewfinder camera. This economically priced camera (\$895.00) has a self-contained 6 inch monitor viewfinder enabling the operator to have full control over picture image and video level control. It also permits necessary corrections to be made at camera position. Monitor eliminates random searching for subject. The TCM-20 monitors video tape recording playback, too.

Add the Concord's VTR-600 Video Tape Recorder to the TCM-20 for step two in formulating local origination. The VTR-600 was designed to record and reproduce optimum picture and sound in an easy-to-operate, compact portable instrument. Re-

liable . . . Versatile. Functional indoors and outdoors, works in motor vehicles, helicopters, by utilization of available solid-state inverter. This economy priced (\$1,150.00) unit records up to 40 minutes on a 7 inch reel of 1/2" video tape.

Add the Weather-Scan II time/weather unit to the Concord camera and recorder, and your local origination package is complete. The all-new Weather-Scan II time/weather economy unit (\$2,195.00 equipped as shown) features high performance AFCO camera and Texas Electronics instruments. A General Electric TE-20 camera and up to 7 instruments are optional, and other features may be added to the Weather-Scan with ease to meet any system requirements.

Start developing a local origination program for your system now. Put the R. H. Tyler Company low-cost formula into action. For complete information write today to: 1405 - 15th Street, Wellington, Texas. (806) 447-5841



**ORIGINATOR OF TIME/WEATHER  
EQUIPMENT FOR CATV**

Broadcasters reportedly are opposed to the moratorium, but indicate a willingness to negotiate further. The copyright forces, however, argue that such a moratorium would constitute an unconstitutional imposition of the rights of the copyright holders to court protection.

### Restraining Order Denied

Federal Judge W. Arthur Garrity has denied a petition by Springfield TV Broadcasting Corp. for a temporary restraining order against Pioneer Valley Cablevision, Inc., operator of systems in Greenfield, Monson, Palmer and Ware, Massachusetts. Springfield TV Broadcasting Corp. operates Massachusetts television Channel 32 in Greenfield (WRLP), and Channel 22 in Springfield (WWLP).

The broadcasting concern's suit alleged that the defendant had been engaged in the practice of carrying TV signals over its systems which duplicate the programs carried by WRLP and WWLP. The complaint contended that a loss of revenue had been suffered by the plaintiff because of Pioneer Valley's alleged practices. However, Judge Garrity ruled that the plaintiff failed to make a showing as to immediate and irreparable injury.

### Telcos Announce Merger Plans

United Utilities, Inc. and Citizens Communications, Inc. of Decatur, Indiana, have announced plans to merge. Disclosure of the pending merger came in an announcement issued jointly by Paul H. Henson, president of United, and Charles D. Ehinger, president of Citizens.

Both confirmed that a definitive agreement of merger is being developed by attorneys for the companies and will be submitted to their respective boards of directors in the near future. Such agreements would be subject to approval of the stockholders of both companies at meetings to be held this fall. Owners of common stock of Citizens will receive common stock of United. Citizens preferred stock will be called and redeemed.

United Utilities, Incorporated, which will be the surviving corporation, is a holding company which owns and operates the nation's third largest telephone system, serving nearly 1,300,000 telephones in 18 states. Other pending mergers expected to be consummated by United this summer will increase those totals to more than a million and a half telephones in 21 states.

### Waiver Petition Filed

A petition for waiver of rules that would allow immediate construction of a cable system in Jefferson County, Colorado, has been filed with the Federal Communications Commission by Mountain States Video, Inc. (Bill Daniels-Vumore group). The petition asks for approval of carriage of eight Los Angeles and two San Francisco independent television stations.

The Jefferson County area is part of the Denver metropolitan area and thus falls into the 41st ARB market ranking. It therefore comes under the Top 100 market ruling of the Commission's Second Report and Order.

In the petition, Mountain States Video referred the FCC to specific determinations made by Jefferson County Commissioners that found "after full and complete consideration, including public hearing, the construction, operation and maintenance of a cable system — is consistent with the public interest."

According to the petition, "the significant public need for all of these proposed services is manifest, unfulfilled, and awaits, indeed, demands, satisfaction."

Mountain States stated that supplements to the petition would be filed with the Commission to expand the proposal to include other communities as additional franchises were secured in the Denver metropolitan area.

### York, Pa. Suit Filed

A taxpayer's suit which charges that a Pennsylvania CATV company's franchise is "unconstitutional" has caused considerable unrest in the city of York, Pa. The suit, filed by Mr. and Mrs. Arnold Freedman, also names Jerrold Electronics, Inc. as co-defendants and seeks an injunction against the cable stringing operations of Cable TV Company of York, a subsidiary of Susquehanna Broadcasting Company.

The Freedmans' suit states that Jerrold erected a pole on the Freedmans' private property at 260 East Philadelphia Street "contrary to their wishes and over their protests." □

## System Sales

Westinghouse Broadcasting has purchased 81 per cent of the Panama City, Fla. cable system from Bruce Merrill, president of Ameco, Inc. in Phoenix, Ariz. Lewis Gay, a local Panama City stockholder holds the remaining 19 percent interest in the system. The system has 110 miles of plant serving 2,600 subscribers and a potential of 6,000. The sale was handled by Daniels & Associates.

An issue and sale of stock has been announced by First Missouri Cablevision Inc., with the specific purpose of purchasing all the stock of Cablevision Inc., of Sedalia, Missouri. The Sedalia firm is owned by nine local individuals and ten of 13 incorporators residing in Columbia, the home of FMC. The 13 incorporators of FMC own

226,000 shares in their corporation and about 587,000 shares are being offered for public purchase at \$2 per share.

Columbia Broadcasting System, New York, has acquired a 49 per cent interest in Television Signal Corp., owner of a community antenna TV system in the San Francisco area. The acquisition marks the network's initial U. S. entry into CATV. CBS has minority interests in Canadian systems in Vancouver and Victoria, B. C.

Mission Cable TV, Inc., presently operating CATV systems in San Diego, El Cajon, La Mesa, Chula Vista, and Poway, Calif., has purchased Vision Cable, Inc. of Poway. Al Eddy, president of Vision Cable, stated that his company found it necessary to sell because expansion plans had been halted by factors beyond his control. □

# profitable Setup

## Maintenance of CATV Systems Costs Less with Jerrold Test Equipment.

Tune in Jerrold Test Equipment and tune out excessive maintenance test costs. Efficient, accurate and dependable, Jerrold set-ups cut check time to the bone. System performance is optimized and so is your profit picture.

As cable TV systems grow... more channels are added... greater distances are covered... your need for swept frequency test equipment becomes more critical. Rely on Jerrold. The most experienced manufacturer of CATV systems, and the test equipment to back them up.

**SS-300-7F Sweep System**... sweep generator (500 kHz to 300 MHz) plus a variable marker generator plus crystal generated harmonic chain plus a detector system, all in one compact housing. This lightweight (just 20.5 pounds), battery or standard power unit, operates sub-channel through VHF. Calibrate, test, troubleshoot... anywhere in the field from head-end to extremity.

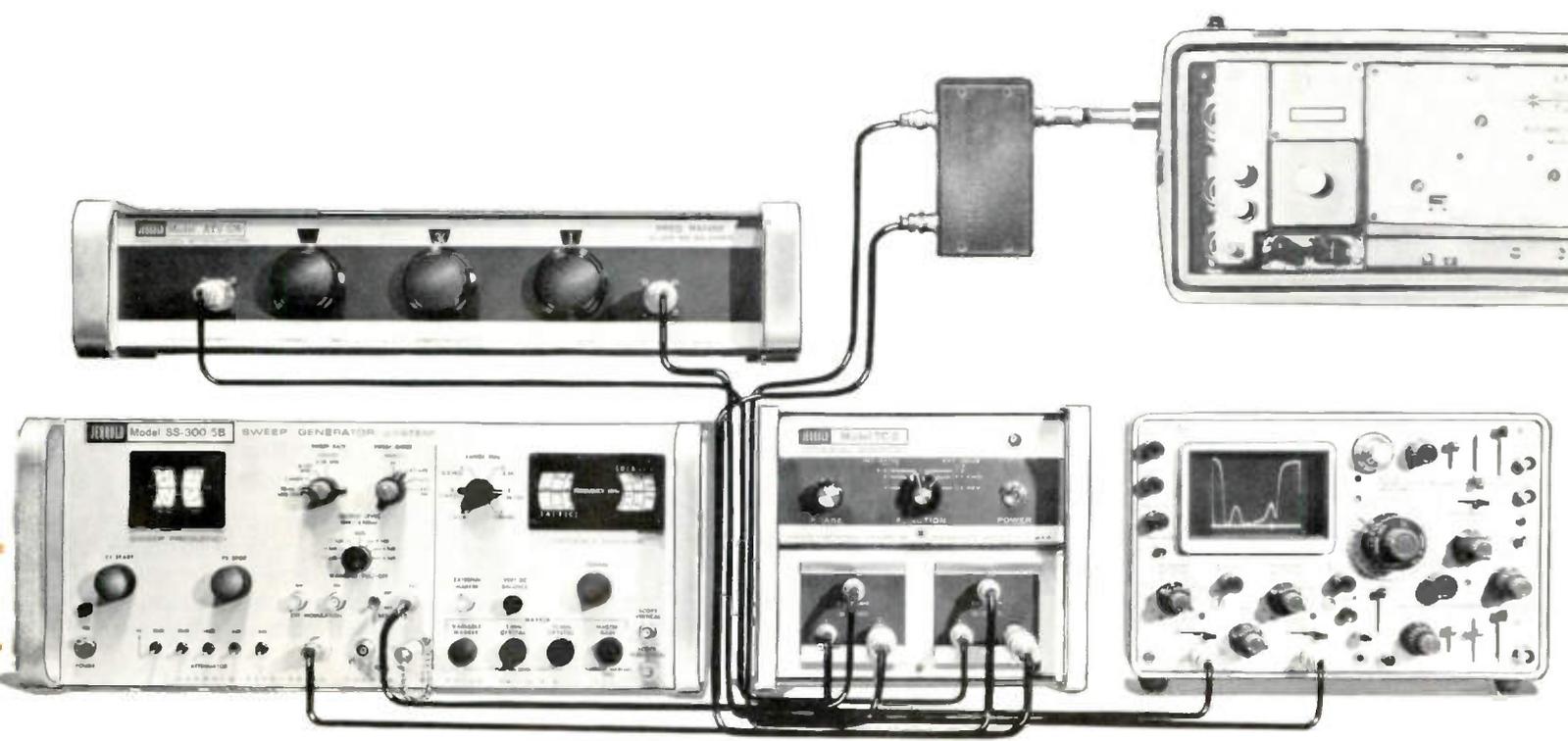
**TC-2-7F RF Coaxial Switcher**... permits simultaneous viewing of two traces (signal and calibrated reference) on a standard scope for ultra-reliable, fast, *Measurement By Comparison* testing. Since both traces derive from the

same basic source, high accuracy is achieved. This method compensates for non-linearity of detectors, oscilloscope drift, and line voltage variations. Alignment and maintenance testing is greatly simplified.

**RLB-H-7F RF Bridges**... a single RF bridge that covers sub-channel to VHF-TV. For use in test set-ups of return loss (VSWR) measurements of amplifiers, taps, filters—in fact, any RF distribution equipment in the system. Frequency range is 4 MHz to 220 MHz at 60 dB balance.

**ATV-Series Precision Attenuators**—combining the accuracy of the best “pull-and-turn” drum attenuators with the mechanical convenience of rotary or progressive-addition type instruments to provide extremely accurate values from dc to 1200 MHz. Available in single and multiple models.

If you're in cable television, consider Jerrold RF Test and Measurement Equipment... designed by CATV experts for CATV experts. Contact your Jerrold salesman or write Jerrold Electronics Corporation, 401 Walnut Street, Philadelphia, Pa. 19105.



# FOCUS

## ... On People

### Systems

**Ralph E. Hembree**, controller of United Transmission, Inc., has been named general manager of the company's CATV Division, it was announced recently by C. W. Stanley, vice-president.

**William Sinkunas** has been appointed northern division manager for Telecable, Inc. He will be responsible for systems in Anacortes, Bellingham, Burlington, Mt. Vernon and Sedro Woolley, Washington. Prior to this appointment, he managed systems in Bellingham, Washington, Barstow and Laguna Beach, California.

**Ralph Hillard** of Galena, Ill., has been named manager of TelePrompTer Corp.'s Farmington Cable TV in Farmington N. Mex. Hillard organized Galena Cable Inc., a CATV company which built the first cable TV system in Illinois in 1952 at Galena. In 1961, he organized Cable TV Construction, a company specializing in construction of cable systems and sold the business in 1965 to Rock Island Broadcasting Co.

**Sanford N. Levine**, president of Nation wide Cablevision, Inc., has been elected a corporate vice-president of Kaufman and Broad Building Company, parent company of the CATV firm. Since joining the firm, Levine has rapidly expanded their operations and is presently directing nine cable TV systems in California. Prior to joining the company, he had broad experience in the electronics industry.

**James O'Farrell**, Stevens Point who has operated the Teltron Cable television firm there for the past two years, has been named manager of Marshfield Valtronics. A native of Fremont, Ohio, O'Farrell has been in the radio and cable business for five years.

**Doug Cairns**, manager of Cowlitz Cableview, Longview, Washington, has been named comptroller of

the Longview Daily News. Cairns will continue as manager of the local cable system.

**Raymond D. Poorman**, it was recently announced, has been named transmission and construction engineer for GT&E Communications Inc., a subsidiary of General Telephone & Electronics Corporation. Poorman will be responsible for the engineering and construction programs for the company's northwest division headquartered in Edmonds, Wash.

**Don Guthrie** has joined Time-Life Broadcast, Inc. in the newly-created position of CATV marketing director. Guthrie previously served as marketing manager of TelePrompTer Corporation.

**William H. Tucker** has resigned his position with Bettlevision Systems and Mountain National Corp. and has announced the formation of a company, Best Associates, Inc., which will seek franchises and acquisitions in the CATV field.

**Myrl F. Johanning**, staff accountant, has been promoted to accounting manager of United Transmission, which is a subsidiary of United Utilities, Incorporated.

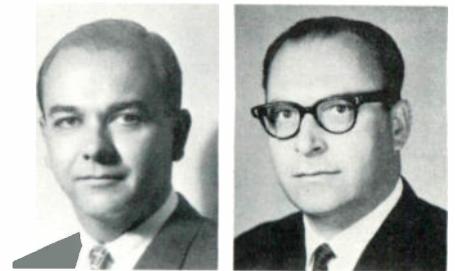
**William G. Russell III** has been named manager-finance and treasurer of General Electric Broadcasting Co. and General Electric Cablevision Corp. His headquarters will be in Schenectady, N. Y. He joined General Electric as a trainee in its business course. A series of promotions led to his being named a member of the corporate auditing staff in 1959.

### Suppliers

**Robert A. Brooks** has been appointed vice-president of sales for Spencer-Kennedy Laboratories, Inc. Brooks first joined Spencer-Kennedy in 1954 and remained there until 1965 when he joined the Anaconda Wire and Cable Co. as chief engineer of Communi-

cations Systems Group. He was appointed marketing manager, CATV for Anaconda's newly-formed affiliate, Anaconda Astrodata Co. in 1966.

**Frederick W. DeTurk**, has been appointed market manager for communications of Phelps Dodge Copper Products Corporation. DeTurk joined PDCP's advertising department in 1953 and became manager of that department in 1957. He became sales manager at the North Haven, Connecticut office in 1964 and was again transferred in 1965 to the New York office as sales manager coaxial cable for the firm.



Mr. DeTurk

Mr. Blum

**Heinz Blum**, of Entron, Inc., has been promoted to the position of senior vice-president in charge of advanced engineering. Mr. Blum will be responsible for the implementation of new research and development programs for the firm. He has been vice-president in charge of engineering and has headed Entron's engineering and research/development departments since 1953.

**Eugene Scheer** now has the position of assistant manager, special projects with the Superior Cable Corporation.

**John D. Couturie**, vice-president and treasurer of Hughes Aircraft has been elected a member of the board of directors of the TelePrompTer Corporation. TelePrompTer and Hughes are partners in Theta Communications.

**Robert E. McIlvane** has been elected a director of the Anaconda Wire and Cable Company, R. B. Steinmetz, chairman of the board, announced. McIlvane, vice-president, division operations, has been with the company since 1956.

**Robert D. Hayward** has joined Ameco Engineering Corp. as mechanical designer. Hayward was a development technician with Douglas Astropower Lab at Newport

Beach, Calif., where silver zinc cells were developed.

**Midwest Lawn-Saver Equipment Company** president Don Killoren has announced that the company's name has been changed to **Midwest Utility Plow & Equipment Corp. (MUPECO)**. The manufacturing and installation company is based in Appleton, Wisconsin.

**Orville D. Page** has been appointed vice president of product engineering, it was announced by Edward P. Whitney, president of Entron, Inc. Before joining Entron, Page was director of engineering and marketing for the Vitro Electronics Division of Vitro Corporation in Silver Spring, Md. He also has held sales, managerial and technical positions in several other engineering organizations.

**Donald Imbody** has been named sales engineer for the southern Illinois and southern Indiana area by the CATV systems Division of Jerrold Electronics. He will operate out of Jerrold's newly established regional office at West Lafayette, Ind.



Mr. Page

Mr. Imbody

**Joseph A. Licata** has been appointed controller of Blonder-Tongue Laboratories, Inc. He originally joined the firm in 1966 and has served as manager of general accounting since that time. Prior to that, he had extensive experience with a large New York public accounting firm.

**Ted Atwood, Jr.** has been appointed regional sales engineer for the commercial marketing department of American Electronic Laboratories, Inc. Atwood will service all AEL customers for the company's standard product lines, and will be available for consultation and assistance regarding custom engineered products and special services.

**Michael A. Carlisle** has joined Ameco, Inc. as sales representative in Nebraska, Kansas, Iowa, Mis-

souri and Colorado. Most recently Carlisle was director of promotion for the United Video systems and manager of the CATV system at Columbus, Nebr., now headquarters for his Ameco sales territory.



Mr. Carlisle

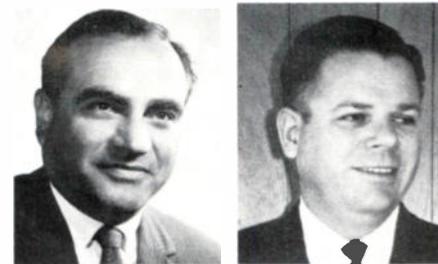
Mr. Poole

**E. D. Poole, Jr.**, has joined Ameco, Inc., as director of component marketing, responsible for finished goods, inventory, field sales and customer services.

**Raymond C. Campbell** has joined the Brand-Rex Division of American Enka Corporation as a branch manager. Campbell has been given responsibility for the sale of wire, cable, tubing and sleeving in New York City and Long Island.

Several appointments have been occasioned by the expansion of Baker Equipment Manufacturing Co. into new markets and the development of new products to serve those markets. **N. W. Chappell** has been named manager of the engineering department. **F. D. Mills** has been named application and development engineer and will be in charge of that department. **Elmer S. Farmer** has been appointed senior engineer in charge of the truck and body department. And **William R. Pierce** is the chief designer — mechanical section of the engineering department.

**Robert L. Halpern** has been appointed vice-president and general manager of Concord Electronics, manufacturer of closed circuit television equipment.



Mr. Halpern

Mr. Goodall

**Tom Goodall**, is now the Cascade representative in northern California and Nevada. Goodall has

been in CATV for more than 10 years as technician, installer, assistant designer, assistant manager, and sales/service representative. His headquarters are in Rohnert Park, a suburb of San Francisco.

## Professional

**Commissioner Robert E. Lee** was sworn in for his third term as a member of the Federal Communications Commission in a brief ceremony in his office recently. Chief Hearing Examiner James D. Cunningham administered the oath. The Senate had previously confirmed the nomination.

**W. Wallace Warren** has joined Malarkey, Taylor & Associates as engineering assistant to Arthur S. Taylor, vice-president of engineering. Warren has spent many years in the broadcasting and engineering fields and was formerly associated with Howard S. Frazier, Inc.

Continental Cablevision of Upper Sandusky, Ohio, has selected **Barash Advertising** of State College, Pa., to handle advertising, public relations, and promotional services for the new CATV system. The system was energized last month.

The **Harry P. Bridge Company**, Philadelphia, Pa., has been named the Philadelphia advertising agency for TeleSystems Corporation, Glenside, Pa. Bridge will handle advertising, public relations, and other promotions for the firm's Philadelphia CATV franchise.

**John F. Dille, Jr.** has been appointed chairman of the National Association of Broadcasters Future of Broadcasting Committee. Dille is immediate past chairman of NAB's board of directors.

**Roland Yount**, president of Trans-Com, Inc., micro-wave consulting engineer of Denver, Colorado, has announced that his firm has opened a branch office at 5622 Dyer in Dallas, Texas. John Israel, vice-president of T. C. I. will head up the new office. □

An error appeared in our September issue on page 34. The captions for the photos of Messrs. Triller and Yager are reversed.

# The Role of Cable Television In our Changing American Society

By John P. Campbell  
Atlanta, Georgia

Anyone who's been in the swim of CATV for a number of years will be quick to admit that this industry has endured its share — and more than its share — of problems. We've learned to expect and accept trouble from many directions every time CATV interests make a progressive move.

Earliest of the antagonists in my memory were the radio and TV servicemen, who individually and collectively organized to protect their interests in the sale and service of antennas. Then came the translator proponents to occupy our attention for some time. In recent times we've seen the emergence of the Bell System and the independent telephone companies as parties interested in participation, control or suppression of CATV.

The attitude of certain television and radio broadcast interests seeking to keep CATV in a secondary position is the simplest of all to explain, since the motive is so transparent — protection of an entrenched establishment against any potential threat from without. There's been ample proof of their power.

When we observe the educational and UHF broadcasters and the majority of the Federal Communications Commission people participating in action to slow the development of cable television, it's time for those of us who like to consider ourselves "career" CATV people to ask "Why?" Surely those organizations in government and industry charged with responsibility to serve the public interest would not expose themselves openly to criticism of their motives in this area. ETV stations almost universally reap bonus coverage

from CATV. UHF stations gain a big advantage when carried on CATV — they get "dial position equality" with the dominant VHF stations, frequently a position between network channel positions on the TV dial. What a seldom recognized advantage for hard-pressed UHF stations!

Let's be honest with ourselves about government regulation, however. We know that no government can leave unregulated any communications facility, CATV included, in order to prevent the possibility of its misuse by subversive elements. We have no quarrel with the concept of Federal regulation that's reasonable and conducive to freedom in communications. This writer, for one, welcomes the announcement by President Johnson of the formation of the Task Force headed by Chairman Eugene V. Rostow to re-study the allocation and use of national and international frequency resources in a changing world. The President's Task Force, which is staffed by distinguished and able thinkers, will give the merits of coaxial cable long overdue analysis and evaluation as a means of transporting information in congested areas. And we can look for little or no material change in Federal regulatory policy until Congress updates existing legislation in this field.

The communications industry that emerges from the Task Force study and subsequent Congressional action must be structured and financially powered to serve the society of America's future. This must be done if we are to save traditional freedom under new conditions. Will the pressures generated within the "super cities" of tomorrow bring about the suppression of our personal liberty? Will the economics and the efficiency of space transmitters further channel the distribution of news, entertainment, and perhaps propaganda to the people from fewer and fewer sources? Would liberty in America survive under conditions in which individual citizens become, in effect, isolated from participation in the exchange of ideas?

I draw here a distinction between the passive absorption of communications intelligence, such as watching and enjoying television, and the actual participation of free citizens in the exchange of ideas through television and radio. It's the difference between sitting in the audience to watch a play and, being in the cast. No matter how much change is in store for us, we must have a radio and television industry structured to serve a democratic society of thinking, free men. Cable television can earn for itself a place of dignity and purpose in future communications by bringing the people back into active participation in local television.

## ABOUT THE AUTHOR



A 13-year veteran in the CATV management field, John P. Campbell built the first metropolitan-market system in the country at Dubuque, Iowa. His career includes positions with Jerrold Electronics, H & B Communications, Cox Cablevision, and Tele-rama, Inc. He has served as president of the North Central Community Television Association

and State president of the Southeastern Community Television Association. Now a sales, advertising and management consultant to the industry, Campbell brought into CATV several years of experience as a newspaper advertising executive.

In the mid 1950's I remember reading a speech delivered to a Congressional committee calling for the suppression of the infant CATV industry as a parasite on the back of "free television". The speaker established a "Totem Pole" concept of respectability, with the largest stations at the top, smaller stations and translators in the middle, and poor little parasite CATV at the bottom. Those of us active in CATV at the time held our tongues. For years we were advised not to alter any station's signal or add any new service for fear of offending the powers-that-be. The Second Report & Order put an end to that concept forever.

Today, a decade later, we find ourselves in a world of rapid change, face to face with new opportunities to serve society. We've harnessed the transistor, the orbiting and fixed space transmitter, the laser. We've witnessed the development of small cameras and videotape recorders. We have tools and equipment at our disposal that give us a power we never had. There isn't a single provision in the Second Report that comes right out and prohibits our use of these new tools for the betterment of our communities.

Whether you undertake local program origination in the grand style of a corporate research project, or start with a simple economy package, you will be building a solid foundation for the future of your business. Your cable television service will be different from regular reception because the public will sense your interest in their personal needs. Audience ratings should never concern you; you'll never approach broadcasters' coverage of the masses. Your audience will be the specialty audience interested in intensely local happenings. It would be a mistake, in my opinion, to overlook the specialty approach and overconcentrate on programming that duplicates broadcasting fare. You will develop the skill of knowing your market, the art of reaching it with your sales promotion, and the talent of serving it with program content appropriate to your role. Sales will come family-by-family and group-by-group until your saturation of the community becomes an important force.

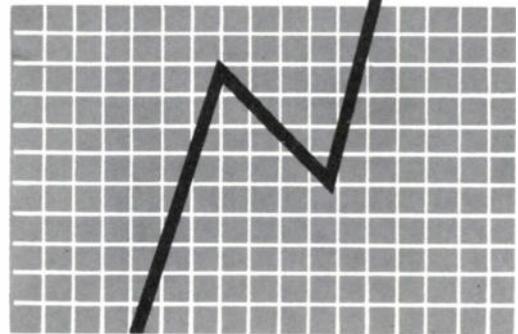
The concept of providing a television advertising service to retail businesses in your service area is a fine way to bring in the extra income needed to cover a part of your closed circuit expenses. The local merchants need such a service and may very well be entitled to it, as suggested last year by a Justice Department representative. Your cable is capable of delivering ad impressions seven days a week, not the weekly or bi-weekly service typical of most small towns and suburbs. The added news value of local retail ads will attract more viewers, too.

Since the organization and development of a worthwhile closed circuit operation takes time, money and hard work, the moment to begin is now. Even if you start in a small way and make mistakes along the way, keep at it with persistence and courage because you're building support under your business — support based on your own ability — not someone else's.

As long as CATV depends wholly on the ability and talent of others, it will remain vulnerable. But when we develop to the point where our own ability and talent become a part of community life, we'll get the government support we lack today. □

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An Exclusive report based on  
the results of TV Communications'  
national cablecasting survey

## National Survey Indicates Major Move into Cablecasting

For a long time, cable TV operators avoided program origination like the plague. The industry position being that CATV was nothing more than an antenna service, a long cable into people's homes.

Copyright suits, the FCC and groups like AMST have combined to change this attitude. The CATV industry has learned that refraining from origination is no shield against attacks by special interest groups. We have also learned that local origination is very much appreciated by CATV subscribers. Therefore, it generally adds to system profits.

Since discussions with CATV operators all over the country had indicated a growing trend toward local origination, *TV Communications* decided to undertake a comprehensive survey to determine the extent of this practice.

The results were surprising. More than half (51%) of our respondents said that they are originating some sort of local programming. Predictably, the most common form of local service was a time/weather channel. Even in the days when CATV operators were trying carefully not to offend anyone, weather boards were quite common. The opponents of CATV seldom voice any criticism of this kind of service, and many CATV



*Four Texas State legislators are shown during taping session for cablecasts on 25 systems in that state.*

operators do not even think of it as local origination. However, fully 25% of our respondents were cablecasting other types of programs.

The variety of types of programs was also surprising. CATV operators have, in many cases, shown more imagination in program variety than have local TV stations. They telecast everything from stock market reports to Chamber of Commerce meetings, movies, plays, (live and on tape) and Halloween parades.

Since CATV operators generally have little or no money for program production, they depend heavily on the resources of the communities they serve. Thus, local people see their neighbors or their neighbors' children on cablecasts, and the system becomes a true community project.

Table I summarizes the types of programs originated by our respondents.

### Advertising Revenue

Charging for advertising time on local cablecasts is an entirely different matter. It is obvious that CATV operators are still reluctant to go after advertising revenue — at least until the copyright issue is settled. Only 7% of our respondents indicated that they charge for advertising. Of those who do charge for ads, incomes vary tremendously, ranging from \$40 per month to



*Cablecasting provides many local, state and national politicians with a unique opportunity to reach their constituents. Shown above is Senator Warren G. Magnuson during taping session for an award ceremony to be cablecast on Telecable's Channel 10 in Olympia, Washington.*

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*Film chain and slide unit are part of many local origination operations. Shown here is the equipment used in the showcase cablecasting studios of Cleveland Area Television's Lakewood, Ohio system.*

a time/weather channel originator. Since 65 of our respondents indicated that they plan to buy this type of equipment, it seems reasonable to forecast sales of about 250 such units over the next two years.

Not too many of our respondents indicated that they are presently in the market for a film chain — only 27 out of 414. From the interest in showing movies and public service films however, it seems likely that many systems will eventually invest in the film chains.

### Cablecasting Fills The Gap

Looking at cablecasting as a whole, it seems obvious that the CATV industry is finally determined to fill the gap between national and local TV programming.

As FCC Commissioner Lee Loevinger pointed out at the NCTA Convention this is not only an opportunity,



*Simple, live originations using weatherboard camera are feasible for small systems, and still provide substantial community service image. Newscast on Texico, New Mexico-Farwell, Texas system is shown in progress.*

but a responsibility for CATV operators. And indications are that cablecasters relish the responsibility. We could cite many examples, but two will suffice.

Al Ricci, of Pioneer Valley Cablevision, recently cablecasted a 16MM film of Rep. Silvio O. Conte (R-

**TABLE III  
ORIGINATION EQUIPMENT TO BE  
PURCHASED WITHIN NEXT  
TWO YEARS**

TAPE RECORDERS	111
CAMERAS	97
MONITORS	30
NEWS WIRE CHANNELS	6
WEATHER INFORMATION DISPLAYS	65
FILM CHAINS	27
OTHER	49

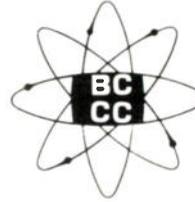
Mass) interviewing Sen. Charles Percy (R-Ill). Thus, these two congressmen got TV exposure that would have been impossible without CATV.

Perhaps more dramatic is the case of Don Hancock, owner of Ruidoso Cable Television, New Mexico. Setting a high standard for CATV journalism, Mr. Hancock actually went to jail in an attempt to cablecast Ruidoso Hospital Board meeting on Medicare!

As cablecasting grows in scope and sophistication, CATV systems will become a more and more important part of the nation's communications industry. □

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## CATV Directory

OF EQUIPMENT, SERVICES & MANUFACTURERS



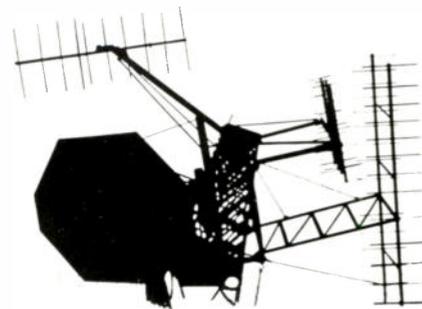
## COMING SOON!

The 1968 CATV DIRECTORY of EQUIPMENT, SERVICES & MANUFACTURES will be published in December. More comprehensive... more detailed... more types of information... more complete than ever before! It's the only publication of its kind... your complete reference source of CATV products and services. Advance orders are now being taken. Pre-publication price — \$5.95; price if payment included with order — \$3.95 (regular publication price — \$6.95). Save money by placing your advance order now.

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## TV Communications

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November 1

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### **FIGURES**

<b>GAIN</b>	<b>50 dB</b>
<b>MAX. OUTPUT LEVEL</b>	<b>+58 dBmV</b>
<b>CROSS-MOD</b>	<b>-57 dB</b>

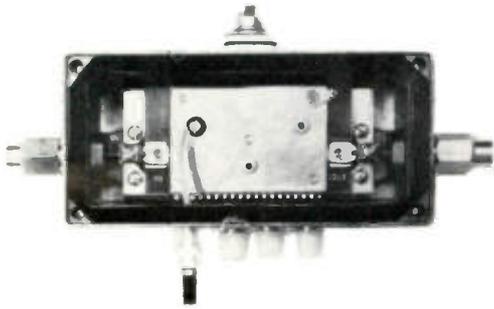
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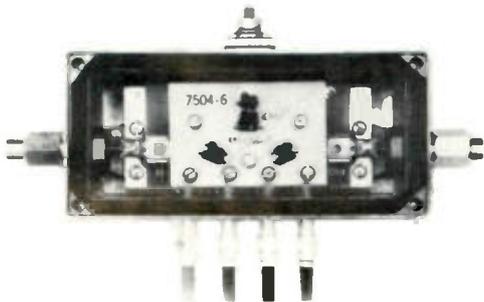
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### **S**CIENCE —

As cable television standards become more stringent, we have intensified our research in the underlying science. Network analysis, semi-conductor physics, amplifier design, information theory, noise and distortion studies are among the subjects of our current computer-aided investigations. SKL's advances in CATV engineering in no small measure reflect the company's location within the largest electronics complex in the world, close to the university center of the Northeast.

### **K**NOWLEDGE —

Twenty years have given SKL a wealth of experience and expertise in every aspect of cable television. In applied research, in product design and manufacture, in system engineering, in CATV financing and administration, in franchise assistance, in turnkey contracts. You name it, we've done it — and we'd be happy to put them all at your service.

### **L**EADERSHIP —

SKL's many contributions to cable television technology have put it in the forefront of the industry. The first wideband amplifiers, the first wideband automatic level control, the first pilot-operated equalizer, the first thermal equalizer, the first directional tap, the first hybrid splitter, and now the first fully automatic solid-state system control amplifiers are all products of SKL's innovative engineering skill. Look to SKL for the significant future trends in cable television.



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## ***TV Communications***

207 N.E. 38, Oklahoma City, Oklahoma

A wide variety of entertaining films and film series are available without charge to CATV'ers

# Free Films for Cablecasting

By Robert Finehout

Vice President, Association Films

Local origination programming can give a CATV system its "identity", "image", "personality" and presumably "id". All qualities that have been bandied about by psychiatrists and Madison Avenue mendicants as well. Conventional TV outlets, limited to single-channel programming, find the lone band restrictive and, as Marshall McLuhan might say "linear". In other words, they cannot offer viewers *concurrent* viewing opportunities. Program must follow program as the words on a page.

But what opportunities exist for CATV? The time is not far off when many systems will be able to offer subscribers as many as 20 separate channels. The opportunities for entertainment, education, information, inspiration and community programming are virtually limitless. Again, to paraphrase McLuhan, the "Uniqueness of CATV is the Medium".

As CATV operators well know, the easiest and most economical way to program "locally" is through a weatherboard or similar mechanical system.

But to serve the needs of ever-growing numbers of subscribers, local programming must provide live and film shows as well as automatic services. System operators can profit from the experience of successful telecasters by installing camera-filmchains and take advantage of the vast storehouse of films available — free. A quick perusal of such directories as "The Free Film Source Book" published by the Broadcast Information Bureau, reveals the world of the sponsored film. These are films provided on a free-loan basis to TV stations, schools, and colleges, service organizations and other local community groups. They are made available in

the public (and sponsor) interest by companies, foundations, government agencies, international organizations, charities, and religious bodies.

Their subject-matter range is vast and varied, giving broadcasters a unique opportunity to provide informative programs devoid of stereotype, sterility and sameness. Many of the country's most imaginative and talented filmmakers create sponsored films, using techniques that are fresh and free of the so-called "industrial" look.

CATV operators who use these films for local programming find it is convenient to order them in series developed by professional distributors, with audience-catching titles: "Discovering America" (a See-the-USA anthology, introduced by Vice President Humphrey), "Thrills and Skills" (the world of sports from racing at Monza to mountain climbing in the Himalayas), "Kyle Rote's World" (an all-purpose series hosted by the personable sports star), and "World in Focus" (peoples and places near and far). Impressive opening titles establish these series and showcase them as a continuing weekly feature.

Other CATV programmers order the films singly for incorporation into their own series and local concepts. They find at their disposal — and for just a few pennies return postage — such exciting film fare as: "Monument to the Dream", the unbelievable story of the construction of the St. Louis Arch, "A Story of Arthur", a musical comedy with a bouncy score on the importance of weight-watching, "Baths and Babies", a delightful slice-of-life glimpse of mothers learning about baby care, "The Islands of Greece",

a Ulysses-like tour with music by the composer of "Never on Sunday", "Thirty Days in May", an exciting recounting of the '67 "Indy" race, "High in the Himalayas", climbing Mount Taweche with Sir Edmund Hillary, and "Child of Darkness — Child of Light", an award-winning documentary about children of the slums.

Some top talent appears in or narrates sponsored films: Mia Farrow, Robert Hooks (star of "Hurry Sundown"), Burgess Meredith, Douglas Fairbanks, Jr., Chet Huntley, Alexander Scourby, and Richard Burton (who narrates and appears on camera in a film on Florence, Italy).

Association Films, a distributor of free films (through its TV division, Association Telefilms) foresees a rosy future for the sponsored film on CATV. In the early days of television (back as far as 1947) stations, hungry for programming, relied heavily on sponsored films. Discrimination in film fare often gave way to desperation and, as a result, many films were aired that were hardly suitable for TV audiences. Today's sponsored films are carefully produced for TV exposure — a most important consideration from the standpoint of content, technique, and freedom from overt commercialism.

Sponsored films give CATV cablecasters the means to develop a schedule that will serve the needs of the community and provide program services not always attainable from off-the-air pick ups or relay. Most important, films can help the CATV operator build his *own* identity and image.

And after all, the more diversity a system can offer, the larger the ultimate audience will be! □

# CATV Buyer's Guide For Local Origination Equipment

A Compilation of manufacturers' data on all types of cablecasting studio equipment, including: Cameras, Viewfinder Cameras, Video Tape Recorders, Film Chains, Multiplexers, Projectors, Consoles, Mobile Studios, Program Originators, Tripods, Dollies, Switchers, and Sync Generators.

## CAMERAS

**Ampex, 2201 Lunt Avenue, Elk Grove Village, Illinois 60007.**

**CC-6450** Comes complete with Vidicon Camera, tripod, microphone, cable and resolution chart. Resolution: 500 lines minimum. Video Output: 1 volt p-p video, 0.4 volt sync. Lens: F/1.4 25mm. Automatic Light Compensation: Video level constant plus or minus 6 db with luminance changes equivalent to 10 f stops. Price: \$589.95.

**CC-6007** Resolution: 550 lines minimum. Output: Composite video one volt p-p, 0.4 volt sync. Lens: F 1.9 25mm. Automatic Light Compensation: Video constant plus or minus 6 db over 6 f stops. Price: \$399.95.

**CC-324** Camera with 3 position C-mount lens turret. Resolution: 550 lines minimum. Internal or external sync. Output: 1 volt p-p video, 0.4 volt sync, RF tunable, channels 2-5. Lens: F 1.4 25mm. Price: \$995.00.

**Blonder-Tongue, 9 Alling Street, Newark, New Jersey 07102.**

**TC-1** Available with Video RF or RF sub-channel or video and RF outputs. Resolution: 600 lines. Output: 1.4 volt video or RF. Lens: F 1.9 25 mm. Automatic Light Compensation: 2000-1. Scanning: Random Interlace. Prices: Video \$712; RF \$712; Sub-Channel \$748; Video & RF \$791.

**TTV-C** Resolution: 650 lines. Output: Video or RF. Lens: F 1.9, 25 mm. Automatic Light Compensation: 4000-1. Prices: Video \$1538; RF \$1624; 3 Output Video \$1681; 800 Line Video \$1681; Remote Control Video \$2110; Remote Control RF \$2196.

**Concord Electronics Corp., 1935 Aramcost Avenue, Los Angeles, California 90025.**

**MTC-15** Vidicon Camera Output: 1.4 volt p-p video, 30mv RF (Channel 5 or 6). Price: Not Available.

**Cohu Electronics, Box 623, San Diego, California 92112.**

**3200** Resolution: 800 lines. Scan: 2-1 interlace. Output: 2 volts video. Lens: Not Supplied. Automatic Light Compensation: 4000-1. Price: \$2295

**Fairchild, 30 Park Place, Paramus, New Jersey 07652.**

**TC-177** Resolution: 800 lines. Scan: Random Interlace. Lens: Not Supplied. Automatic Light Compensation: 4000-1. Price: Not Available.



TC-177

**TC-177 RL** Similar to TC-177, but includes provision for remote control or video processor.

**GBC America Corp., 89 Franklin Street, New York, New York 10013.**

**VR-621** Resolution: 500 lines minimum. Scan: Random Interlace. Output: 1.4 volts p-p video, 30mv RF (Tunable Ch 2-6). Lens: Not Specified. Automatic Light Compensation: 600-1. Price: Not available.

**650 Equipped with Sound** Resolution: 650 lines. Scan: Random Interlace. Output: 1.4 volt p-p video, RF 25 mv, channel 3 & 6. Automatic Light Compensation: 4000-1. Price: Not Available.

**General Electric Consumer Electronics Division, Building 2, Electronics Park, Syracuse, New York 13201.**

**TE-23** Resolution: 500 Lines. Output: 1.4 volt p-p video, 0.4 volt sync, 20 mv RF, tunable Ch. 2-6. Lens: F 1.4 25 mm. Automatic Light Compensation: 4000-1.

Price: \$495.00 (Does not include Vidicon).

**GPL, Pleasantville, New York 10570.**

**1000** Resolution: 1100 lines. Sync: Random, 2-1 interlace, internal or external EIA. Output: 2 volts p-p video. Lens: Not Included. Automatic Light Compensation: 10,000 - 1. Prices: 2 Unit Camera \$2700. Self-contained Camera \$2150.

**Norelco, 100 E. 42nd Street, New York, New York 10017.**

**EL-8000** Resolution: 600 Lines Minimum. Output: 1.4 volt p-p video, 30 mv RF. Lens: Not Supplied. Price: (Less Vidicon) \$695.00.

**EL-8010** (Used with Model EL-8015 Camera Control Unit). Resolution: 35% modulation depth at 5 NCPS. Output: 1 volt p-p video. Lens: Not Included. Price: (Less Vidicon) \$2000.

**EL-8011 Plumbicon Camera.** (Used with EL-8016 Camera Control Unit). Resolution: 35% modulation depth at 5 NCPS. Output: 1 volt p-p video. Lens: Not supplied. Price: (Less sync generator, plumbicon and lens) \$2500.

**Packard Bell, 1920 South Figueroa Street, Los Angeles, California 90007.**

**920** Resolution: 650 Lines Minimum. Output: 1 volt video, 0.4 volts sync. Lens: F 1.9, 25 mm. Automatic Light Compensation: 3000-1. Price: \$779.

**RCA Broadcast & Communications Products Division, Camden, New Jersey 08102.**

**PK-301** Resolution: 700 Lines. Output: 0.7 volt video, non-composite. Lens: Not Included. Automatic Light Compensation: 3000-1. Price: Not Available.

**PK-302** Similar to PK-301 but 2 unit camera with processor separated from camera head.

**Shibaden Corp. of America, 5825 Brooklyn-Queens Expressway, Woodside, N. Y. 11377.**

**HV-50** Resolution: 400 Lines. Output: 1.4 volts p-p video, 30 mv RF Channel 5 or 6. Lens: F 1.9, 25mm. Separate Cam-

era Control Unit. Price: Not Available.

**Sylvania Electric Products Inc., Commercial Electronics Division, P. O. Box 268, Burlington Road, Bedford, Mass.**

**SC-15A** With 3 lens manual turret. Resolution: 650 Lines Minimum. Output: 1 volt p-p video, RF tunable Ch 2-6. Lens: Not Supplied. Automatic Light Compensation: 3000-1. Price: Not Available.

**TeleMation, 2275 S.W. Temple, Salt Lake City, Utah 84115.**

**TMC-214** Portable Vidicon Camera Chain comprising GE TE-22 Camera Head & TMV-101 Camera Control Unit or TMV-202 Dual Camera Control Unit.

**RE-575** 5" add on viewfinder, optional. Resolution: 700 Lines. Output: 3 Isolated outputs with sync optional on each 1 volt composite. Lens: Not Specified. Automatic Light Compensation: Not Specified. Prices: TE-22 Camera \$1350. RE-575 Viewfinder \$790. TMV-101 Camera Control Unit \$995. TMV-202 Dual Camera Control Unit \$1995.

**Television Utilities Corp., 10-11 50th Avenue, Long Island City, N.Y.**

**TUC-1000V** Resolution: 600 Lines. Output: 1.4 volts p-p composite video. Lens: Not Specified. Price: \$395.

**Unimetrics Inc., 1037 Providence Road, Suite 4, Box 6024, Charlotte, N.C. 28207.**

Resolution: 400 Lines. Output: 1.4 volt p-p video .05 volt RF. Lens: F 1.8, 25mm. Scanning System: Random Interlace. Price: \$299.95.

**Vikoa Inc., 400 Ninth Street, Hoboken, N.J. 07030.**

**ST-1000** Resolution: 500 Lines. Scan: Random Interlace. Output: 1.5 volt p-p



ST-1000

video, 30 dbmv RF (Ch. 2-6). Automatic Light Compensation: 4000-1. Lens: F 1.9, 25mm. Price: \$295.

## VIEWFINDER CAMERAS

### Ampex

**CC-326** 9" Viewfinder with 4 lens manual turret. Resolution: 600 Lines. Output: Composite or non-composite video. Sync: Random, 2-1 interlace or external EIA sync. Lens: F 1.4, 25mm. Prices: With Random internal sync \$1795. With Provision for EIA Sync Generator \$1995. With Rear Accuated F 1.5 23-90 mm Zoom Lens \$2395.

TV Communications

### Blonder-Tongue

**8" Viewfinder** with 4 lens turret. Resolution: 650 Lines. Output: Choice of video or RF. Sync: Internal or external EIA. Automatic Light Compensation: 4000-1. Prices: Video Output \$2962. Video & RF \$3047. Studio Net Remote \$3533.

### Concord

**TCM-20** 6" Viewfinder, single lens. Resolution: 500 Lines. Output: 1.4 Volts Video. Lens: F 1.8, 25mm. Price: \$900.



TCM-20

### Fairchild

**TVF-177** Resolution: 800 Lines. Scan: Random Interlace or External. Lens: Not Supplied. Automatic Light Compensation: 4000-1. Price: Not Available.

### GBC

**VF-301** 5" Viewfinder. Resolution: 450 Lines. Output: 1 volt video, 0.4 volt sync, 30 mv RF (Ch. 2-6). Price: Not Available.

**VF-201** 5" Viewfinder. Resolution: 600 Lines. Output: 1.4 volt video, 100 mv RF (Ch. 4-6). Lens: 25-100 zoom, 4 1.8. Sync: Built in 2-1 sync generator, provision to accept external sync. Price: Not Available.

### GPL

**900** 9" Viewfinder, 4 lens turret. Resolution: 800 Lines. Output: Video. Lens: Not Included. Automatic Light Compensation: 4000-1. Sync: External EIA. Price: Not Available.

### Norelco

**100** 6-1/2" Viewfinder. Resolution: 600 Lines. Sync: External. Output: Composite or non-composite video. Lens: Not Included. Price: (Less Vidicon) \$1800.

### Packard Bell

**9200** 8" Viewfinder. Resolution: 650 Lines. Output: 1.4 volt video, 0.4 volt sync. Lens: 25-100 mm electric zoom. Automatic Light Compensation: 3000-1. Price: Not Available.

### RCA

**PK-315** Built-in pan and tilt and zoom lens controls. Resolution: 700 Lines. Output: Composite or non-composite video. Lens: Not Supplied. Automatic Light Compensation: 3000-1. Price: \$3950.



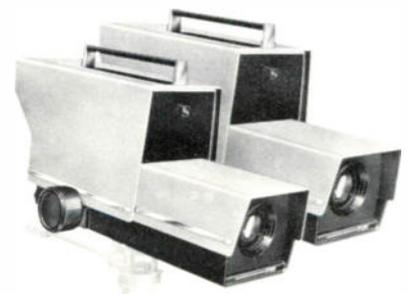
PK-315

**PK-330** 8" Viewfinder. Built-in pan and tilt and zoom lens controls. Resolution: 850 Lines. Output: 2 video composite or non-composite. Lens: 10-1 zoom. Automatic Light Compensation: 2000-1. Price: \$9650.

### Sylvania

**SC-9A** 8" Viewfinder with 4 lens turret. Resolution: 800 Lines. Output: 1.4 volt video. Sync: EIA Internal. Price: Not Available.

**SC-16A** 9" Viewfinder with built-in zoom lens. Resolution: 650 Lines. Output: Composite or non-composite video. Lens: 4-1 zoom. Automatic Light Compensation: 3000-1. Price: Not Available.



VF-1000 and VF-1500

### Television Utilities Corp.

**VF-1000** 5" Viewfinder with built-in zoom lens. Resolution: 600 Lines. Output: Composite video & Sync. Lens: 4-1 zoom. Automatic Light Compensation: 3000-1. Price: \$1795.

**VF-1500** 2 Unit Viewfinder, remote control, built-in zoom lens. Resolution: 600 Lines. Output: Adjustable to 2.25 volts p-p video. Lens: 4-1 zoom. Automatic Light Compensation: 3000-1. Price: \$1995.

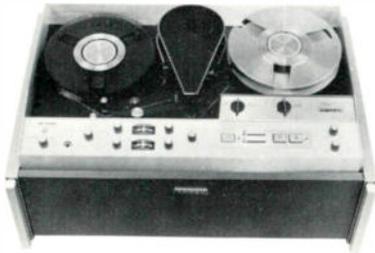
## VIDEO TAPE RECORDERS

### Ampex

**6000** Helical Scan. Video Response: 30hz to 2.5 Mhz plus or minus 3 db. Video Signal to Noise: 39db. Output: 1 volt p-p composite video. Resolution:

250 Lines. Tape: 1", 3000 ft for one hour on 9-3/4" reel. Price: \$1595.

**BR-7000 Helical Scan.** Video Response: 30hz to 3 Mhz. Video Signal to Noise: 42 db. Output: 1 volt p-p composite video. Resolution: 350 Lines. Tape: 1" wide, 3000 ft for 1 hour, on 9-3/4" reel. Price: \$3450.



VR-7500/VR 7500C

**7500 Helical Scan Variable Slow Motion.** Video Response: 30hz to 4.2 Mhz. Video Signal to Noise: 42 db. Output to Video: 1 volt p-p. Resolution: 350 Lines. Tape: 1" wide. Price: \$3995.

**Concord**

**VTR-600 Helical Scan.** Resolution: 250



VTR-600

Lines. Tape: 1/2". Tape Speed: 12" per second. Reel Size: 7" diameter. Price: Not Available.

**GE**

**2-30 Helical Scan — Includes Slow**



2-30

**Motion & Stop Action.** Tape: 1" Wide. Tape Speed: 7.8" per second providing 63 minutes on 8" reel. Price: \$3495.

**1/2" Portable Tape Recorder System.** Includes Model TE-23 Camera, TH-31 Monitor and TD-1 Tape Recorder Deck. Price: (Less Vidicon) \$1695.

**Mobile Recorder System.** Similar to above but in console with accessories. Price: \$1995.

**Norelco**

**3401A/54 Helical Scan.** Output: one volt video. Tape: 1". Response: 30hz to 2.5 Mhz. Price: \$2495.

**RCA**

**TR-5 Mobile Recorder for Monochrome & Color.** Video Response: 25hz to 4 Mhz. Signal to Noise Ratio: 40 db. Output: one volt p-p video. Tape: 2". Price: \$21,000.

**Shibaden**

**SV-700U Helical Scan.** Video Response: 30 to 3.5 Mhz. Signal to Noise Ratio: 42 db. Output: 1 volt p-p video. Resolution: 300 Lines. Tape: 1/2". Price: \$1295.

**SV-800U Helical Scan.** Video Response: 30 to 3.5 Mhz. Signal to Noise Ratio: 42 db. Output: 1 volt p-p video. Resolution: 300 Lines. Tape: 1/2". Includes 37 sq. in. RF video monitor and audio-video modulator. Price: \$1695.

**Westinghouse**

**TG30C17A Video Response:** 30 to 3.0 Mhz. Signal to Noise Ratio: 40 db. Output: 0.7-1.4 volt video, RF channels 4-6. Helical Scan. Tape: 1". Price: Not Available.

**Wallensak**

**PTR-150 Video Response:** 32 Mhz. Signal to Noise: 35 db. Output: 1 volt p-p video. Tape: 1/2". Price: Not Available.

**FILM CHAINS, MULTIPLEXERS & PROJECTORS**

**AET Engineering Specialties, 4202 36th Avenue West, Seattle, Wash. 98199.**

**Bell & Howell Projector Conversion.** Projector is prepared for television use by replacing split phase motor with hysteresis type, replacing present drive system with special gear type pulleys and heavy duty belt, and providing special shutter blade to insure synchronous operation with 30 frames-per-second sweep rate of television system. Price: \$495 plus projector.

**GPL-1000 Film Chain Camera —** Used for reproducing 16 and 35 mm film, 2" x 2" slides and 35 mm film strips. Resolution: 1000 lines. Video Band Width: 12 Mhz. Signal to Noise Ratio: 42 db. Price: Not Available.

**930 TV Projector.** Made specifically for television systems. Synchronous motor. 30 frames-per-second with 5 blade shutter. Price: \$1800.

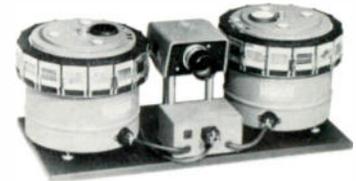
**RCA**

**PK-310 Vidicon Film Camera.** Designed for reproduction of motion picture film and slides. Positive 2-1 interlace EIA

with external sync drive, or EIA with external sync and blanking drive. Standard video output with RF output optional. Resolution: 700 Lines. Response: 10 Mhz. Signal to Noise Ratio: 38 db. Price: \$3050.



322a



332p

**Spindler & Sappe, 1329 Grand Central Ave. Glendale, Calif. 91201.**

**322 Television Projector.** Turrets accommodate 16 slides. Options include pre-viewing lights for visual observation of slides when loading the turret, full line of lenses, lens supporting stand and turbine blower. Price: \$378.

**332 Twin Television Slide Projector.** Price: \$1490.

**Sylvania**

**SC-A10022 Movieplexer System.** Completely integrated movie projector-vidicon camera system. TV projector has phototransistor optical sound pick-up, transistor amplifier and built-in microphone/photo jack. Uses synchronous motor drive that gives 24 frames per second and shutter speed of 120 applications per second. Camera provides 800 line resolution. Price: Not Available.



TMM-203A

**TeleMation**

**TMM-203A Optical Multiplexer.** Designed for selective projection of two 16mm film projectors and one 2" x 2" slide projector in to single television camera with selection accomplished by movable first surface mirrors. Price: \$1295.

## CONSOLES & MOBILE STUDIOS

### Ampex

**7100 Video Trainer System.** Complete closed circuit video recording system including monitor, camera, lenses, connecting cables. Enclosed in mobile console. Camera includes 3 lens turret with 12.5mm, 25mm and 50mm F 1.4 lenses, plus 75mm F 1.9 lens; tripod with tilt head and all necessary switching facilities. Tape recorder includes television tuner, picture monitor audio amplifier, speaker and microphone with floor stand. Price: Not Available.

### Blonder-Tongue

**ST-2 Porta-Studio.** Consists of audio-visual console, viewfinder camera, non-viewfinder camera and accessories. 11 video inputs and 12 audio inputs. Video, RF and sub-channel outputs. Available with EIA sync generator or industrial sync generator. Price: \$6160.

### GPL

**ETV-900 Complete Console.** (Less Camera) provides control of two studio camera chains and a film chain camera. Conforms to EIA RS-170 standards. Controls are grouped to permit one man operation. Includes switcher-fader, special effects generator, wave form monitor, film projector control & 6 input audio-mixer. Price: Not Available.

### Norelco

**101 Includes:** Camera complete with viewfinder, heavy duty tripod, pan & tilt head and dolly; receiver and video tape recorder. Console equipped with casters for mobility. Tape recorder is helical scan type 1". Viewfinder is 6-1/2". Resolution, better than 310 lines. Price: Not Available.

### RCA

**"Teleroamer" Mobile TV Center.** Compact TV studio on wheels. Handles live



TeleRoamer

pick-ups, films, slides and tapes. Price: Not Available.

TV Communications

**"Teletitle" Video Insert System.** Convenient means for inserting captions into monochrome or color video signal. At receiver, captions appear as white letters superimposed on picture. Can produce captions in horizontal or vertical format, either stationary or in motion. Includes IBM Executive typewriter modified to produce large white letters on black page, dispatcher unit which holds the tape, unit to control page speed through the dispatcher, mounting base with adjustable pan and elevation, built-in lighting, camera lens and RCA PK-301 camera. Price: \$7250.

### Sylvania

**SC-A 10004 Mobile TV Production Unit.** Completely self-contained studio control room on wheels for on-the-spot broadcasting and video tape recording. Comprises standard 211 cubic ft air conditioned van divided into two compartments. Front section is operating compartment and rear section is storage and generator plant compartment. Includes two Sylvania model SC-9A viewfinder cameras using external drive from Sylvania model SC-A12002 EIA sync generator. Two tripods and dollies,



SC-A 10004

console with 14" monitor, twin 8" monitor, wave form monitor, sync generator selector, standby sync generator and regulated power supply. Audio group consists of two channel microphone, mixer/amplifier, camera intercom equipment, separate microphones for remote use and double headsets that provide audio through one receiver with a common intercom channel through the other receiver. Price: Not Available.

### Westinghouse

**Wave System** Includes vertical/optical multiplexer and 2 vidicon cameras. Camera 1 is permanently mounted and used with vertical/optical multiplexer for transmission of filmed materials and for pick-up of opaque materials and overhead projection transparencies. Camera 2 is equipped with zoom lens, pan head, tripod and dolly for live TV pick-up. Complete audio system includes audio tape recorder, AM-FM radio, microphone and speaker, pre-set built-in light specially adapted to 2" x 2" slide projector, digital clock, and dual 9" monitors. Price: Not Available.

## PROGRAM ORIGINATORS

### TeleMation

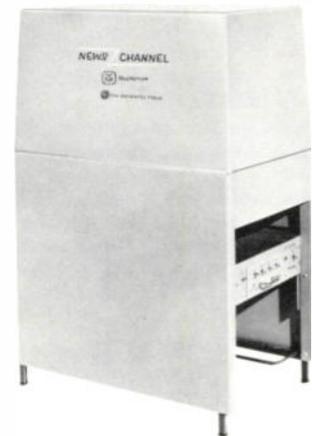
**TMS-97 Weatherchannel "97".** Includes console, GE TE-20 reverse scan camera

with lens. TSG-1 2-1 sync generator, 6 weather dials with remote sensors and 100' of cable, sweep second clock, Eastman Industrial slide projector, slide programmer, control panel, dual controls, and pan and tilt capability. Price: \$5495.



TMS-97

**TMN-201 Newschannel.** Includes 24 hour Associated Press News Wire. Price: Not Available.



TMN-201

**TMC-301 Sav-A-Channel.** Automatic video programmer for combining news channel and weather channel on single CATV channel. Price: \$395.

**TMV-401 Chroma-Channel.** Consists of color sub-carrier generator, burst flag generator, burst adder, amatrixing and encoding circuitry mounted on 3-1/2" x 19" rack panel. 3 bands of color are generated, with each band being controlled by a three position switch. Upper band used to program general weather information produces red signal when rain or snow is forecast, green for fair weather and blue for cloudy weather. Center band used for temperature forecasts. Set for red, green or blue transmission for increasing, no change or decreasing temperature. Lower band designates wind conditions with red, green and blue denoting increasing, no change, or decreasing wind conditions respectively. Severe storm warnings forecast by 2 additional switches associated with upper and lower band. Used

with weather channel or news channel. Price: \$1495.

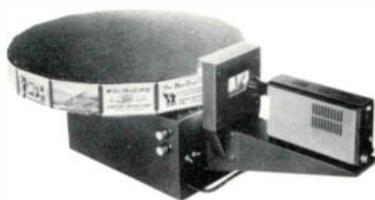
**TMW-75 Weatherchannel "75".** Includes consolette GE TE-20 reverse scan camera with lens. Four weather dials with remote sensors and 100' of cable, sweep second clock, control panel, semi-adjustable dwell control, and pan and tilt feature. Price: \$3995.

**Trans-Lux, 625 Madison Avenue, New York, New York 10022.**

**Stock-Quotation Channel.** 15 minute delay system. Transmitter comprises TV camera, tape viewer and tape pulling devices. Approved by stock exchanges. Price: Not available.

### Vikoa

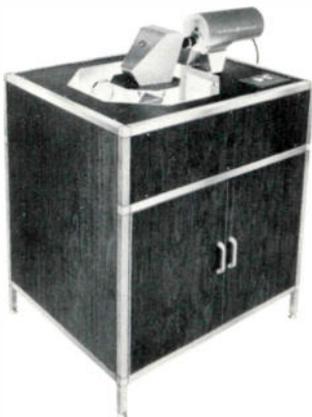
**Minicaster.** 16 Position Advertising Originator. Provides automatic, locally orig-



Minicaster

inated news, public service, advertising channel. Comprises ST-1000 camera and 16 sided rotating card holder. Accepts 3" x 5" cards which can be prepared on ordinary typewriter. Price: (With Camera) \$1100.

**Climatecaster.** Time-Weather Channel Originator. Compact table top console plus outdoor weather sensors. Includes clock, thermometer, humidity indicator, barometer, date indicator and six-sided rotating card holder for news, announcements or advertising. Price: (With ST-1000 Camera) \$2195.



Weathercaster

**Weathercaster.** Time-Weather Channel Originator. Completely enclosed console plus outdoor weather sensors. Eight viewing positions: Clock, barometer, thermometer, wind direction indicator, wind velocity indicator, humidity indicator and six position rotating sign holder. Sign holder can be used for news, public service and advertising. Price: With GE TE-20 Camera \$4200. With ST-1000 Camera \$3550.

## TRIPODS, DOLLIES & PAN & TILT MECHANISMS

**Davis & Sandord, 24 Pleasant Street, New Rochelle, N. Y.**

**CTV Tripod without Dolly.** Price: \$64.95.

**CTVW-1 Tripod with Dolly.** Price: \$79.90.

**ATV Tripod with head, without dolly.** Price: \$105.

**ATVW-3 Tripod with head & dolly.** Price: \$165.



CTVW-1



CPS-34

**BHD Tripod with head, without dolly.** Heavy duty. Price: \$171.

**BHDW-3 Tripod with head & dolly.** Heavy duty. Price: \$240.

**PS-34 Pedestal stand without head.** Price \$260.

**CPS-34 Combination stand with head.** Holds camera and viewfinder. Price: \$176.

**Quick-Set, 8121 Central Park Ave., Skokie, Illinois 60078**

**7301 Samson tripod with elevator.** Price: \$84.00.

**7010 Samson tripod without elevator.** Price: \$66.00.

**7601 Samson dolly.** Price: \$45.00.

**7481 Samson Trolley.** Combines function of tripod & dolly in single unit. Price: \$120.



5302 tripod; 5602 dolly; 5261 head

**7450 Samson mobile pedestal.** Incorporates elevator mechanism contained within elevator tube. Price: \$137.

**7201 Friction Head for Samson tripod.** Price: \$32.00.

**5302 Hercules tripod with elevator.** Price: \$205.

**5010 Hercules tripod without elevator.** Price: \$158.

**5602 Hercules dolly.** Price: \$110.

**5261 Hercules dualok head.** Price: \$173.

**6302 Gibraltar tripod with elevator.** Price: \$400.

**6010 Gibraltar tripod without elevator.** Price: \$280.

**6601 Gibraltar dolly.** Price: \$237.

**6202 Gibraltar Friction Head.** Price: \$415.

## SWITCHERS

### Concord

**VS-3** Contains three interlocking push-button switches and one spring loaded push-button switch. 3 camera locations can be individually observed by one monitor or 3 receivers can monitor one camera. Two or more VS-3 switchers may be gained either in series or parallel to serve other switching arrangements. Price: Not Available.

**Cohu Electronics, Inc., Box 623, San Diego, Calif.**

**9100 Series Switching Matrix Units.** Available with many combinations of inputs and outputs. Price: Not Available.



9100 Series switcher control

**9811 Switcher Control Units.** Designed to operate in conjunction with 9100 switching matrix units. Up to 100 video switch points can be controlled by single 9811. Price: Not Available.

**9900 Remote Control Units.** Designed for use with 9100 series switching matrix units. Price: Not Available.

### GBC

**VS1-3 3 Position Video Switcher.** Price: Not Available.

**VS-4 4 Position Video Switcher.** Price: Not Available.

**VS1-5 5 Position Video Switcher.** Price: Not Available.

### RCA

**PTS-1-8B** Accepts 8 picture sources. Preview & Program outputs interchangeable. Provides fade-ins, fade-outs and dissolves. Solid State for color and monochrome. Price: \$3950.

**PTS-1-8/3A** Accepts 11 picture sources. Multiple preview and program outputs. Provides fades, dissolves and supers. Solid state. Color and monochrome. Price: \$5400.

### TeleMation

**TMV-600** Cablecaster. Video control center combines two-buss, six-input video switcher, pulse distribution amplifiers, video level meter, video processing and control for up to four cameras, video output amplifiers, power supply, and intercom circuits, all in compact desk top unit. All inputs are synchronized from common source. For use

with cameras, tape recorders, news channels, weather channels, etc. Price: \$1595.



TMV-600

TMV-600 S Same as the TMV-600 but includes self-contained EIA synchronizing generator. Price: \$2195.

**Television Utilities Corp.**

**Switcher-Fader-Special Effects Generator.** 8 special effects including horizontal and vertical wipes, corner inserts and wipes. Fades and dissolves. Price: \$1000.

**SYNC PULSE GENERATORS**

**GPL**

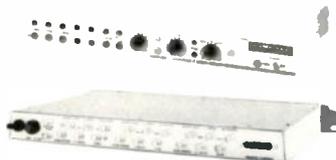
PD-950 Solid State. Integrated circuit, Binary counters. Horizontal scan rate between 525 and 1023 lines per frame. Line lock free run or crystal controlled. Rack mounted. All outputs 4 volts p-p into 75 ohm load. Price: \$1400.

**Norelco**

EL-8250 Transistor Master oscillator locked to line or to external reference frequency or crystal control. EIA standard scanning system. Price: Not Available.

**Telemation**

TSG-2000 All digital circuitry. No monostables - no delay lines - no width or delay adjustments required. Dual source terminated outputs. Dual generators,



TSG-2000

one each for production and operation, equipped with cross connected sync changeovers, relays to provide 100% standby while performing pulse assignment functions. All waveform transistions, both leading and trailing, are derived from clock pulses. Rack mounted. Price: \$1000.

**Television Utilities Corp.**

ED-6064 Conforms to EIA standard RS-170. 525 lines 30 frames and the FCC standards. Four synchronization modes: crystal, internal, power line and external. Price: \$975. □

**GUARANTEED Performance!**



**CAS variable tap gives you guaranteed lowest insertion loss**

On a 1000 foot feeder line you can have four outlets at every tap location and still MAINTAIN LESS INSERTION LOSS and BETTER MATCH with a CAS variable tap than with any other in-line tap you can buy at any price!

**CAS** guarantees a minimum insertion loss in proportion to tap value. There's no wasted signal because CAS ILT-830 Series taps use only the signal taken off the line. You completely eliminate "hit or miss" installation. You can install exactly the right value every time.

**NO INSERTS NEEDED**

CAS taps really are *variable*. A simple screw adjustment (see illustration above) gives you a range of isolation values from 8-30 db. **NO INSERTS TO BUY!** Simply set the isolation value you want on an easy-to-read scale.

**SAVE ON INVENTORY**

Now, you can take the guesswork out of inventory control. CAS units adjust simply to all your in-line tap requirements . . . nothing else to buy . . . no more guessing about which value inserts to stock for "so-called" variable taps. You *save* money on inventory and get *guaranteed* performance.

**Check these features:**

- (1) Single, two or four customer drops
- (2) Weatherproof strand mounting enclosure
- (3) Choice of feeder terminal fittings
- (4) Unique "floating" feature of the CAS center conductor allows for temperature expansion or contraction with no stress on the positive internal connection
- (5) High reliability fiberglass printed circuit boards

**Compare these guaranteed operating specifications:**

Tap loss (variable)	8 db	30 db
Insertion loss (variable)	1.3 db	.25 db
VSWR (input & output)	1.35	1.2
VSWR at tap	1.25	1.25
Directional isolation	23 db	35 db
Min. isolation between 4 taps using CS-4 cover splitter	20 db	

**Order today!** Complete specifications on request.



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New entertainment format  
provides taped "foreground"  
music service on cable

# Programmed Music for CATV

By Don W. Clark  
Manufacturer's Representative

An entertainment program service is now available to CATV operators in monaural or stereo taped library services which are currently being programmed for some very successful AM & FM radio stations. It is possible for a CATV operator to select a musical format from an almost unlimited variety of categories of music from practically every recording company.

System operators have generally been limited to instrumental background music, programmed for an unintrusive atmosphere in commercial establishments — not for entertainment. The alternative was to pick up an FM channel that extended the radio station's audience without compensation to the CATV operator. The announcements on such FM produce an annoyance to the subscribers, without local interest.

Some highly skilled, professional program service companies have stepped into this gap and a remarkable listener acceptance has been achieved. The secret of high fidelity entertainment programming at an economical cost, is a good taped program library. Regular monthly exchange replacements provide constant updating.

Not only the smaller radio stations, but many of the largest, highly competitive markets are now successfully using these services. To provide an insight into the recent acceptance, here are a few current examples:

KSL-FM Salt Lake City is automated and uses a full time stereo taped program service "Beautiful Music". During certain hours they have been rated with 64% of the total radio audience in a 20-station market. KPOL, AM & FM, Los Angeles are automated, use a 'Good Music' program service and are consistently rated number 4 or 5 in that 80-station market. KMET-FM also Los Angeles is automated in stereo and is rated in the top eight stations, combining all AM & FM's. These stations use a program service provided by Alto Fonic Programming of Hollywood, California.

To see how this service can be adapted to CATV, let us analyze the equipment required. Music mixing tape equipment should include two or three tape transports of the two direction, automatic reversing type, either 10½" or 14" reel diameter. Each of these is loaded with a different category of programming, in either mono 2-track or stereo 4-track tapes. With automatic reversing, each reel runs from three to eight hours before repeating, depending on speed and reel size. Each selection is followed by a subaudible 25-cycle tone for switching, and one second of silence. A mixer unit then switches automatically and smoothly back and forth

between reels, to control the programmed sound without repetition of sequence.

And people do become annoyed by a repetition of sequence. They notice a particular selection familiar to them and then are aware of the following selections. Mixing from different categories on different tape transports eliminates this problem.

Another service for your subscribers can be added with the automatic insertion of local public service announcements on the hour or half hour. This can be accomplished by adding a multiple cartridge playback unit to the music mixing system with a control timer. A unit with 24-cartridge capacity can handle a wide choice of different announcements. Changes are then accommodated by the recording or re-recording of a cartridge and inserting it, even on short notice. The timer can be set to bring these announcements in as desired. In every case there is no switching until the selection is completed; the unit then recognizes the tone, delays the start of the next music selection, and inserts the announcements.

Recording the announcements is easily accomplished with a separate record and playback cartridge unit. A "cue" tone is automatically recorded on a separate track with the "start" (record) button. At the end of the announcement, a second button inserts a different tone for transferring back to music. A series of announcements or special features such as local interviews, club meetings, etc., can be recorded on cartridges as desired. An emergency warning can also be recorded on a cartridge and played into the system from the combination record unit.

A less expensive announcement unit can be achieved by using a large single cartridge with a series of announcements in the record and playback unit, in place of the additional multiple cartridge unit.

In some of the larger communities served by CATV, there is another source of income available through the sale of background music to commercial establishments. In this case ASCAP & BMI performance licenses are required. These can be covered on a blanket basis for the users, at an average combined cost per location of about \$2.00 to \$3.00 per month. The music programming company can be of assistance in this area.

The cost to the CATV system for a taped music programming service can vary from \$40 to \$165 per month. The equipment on a lease basis will add somewhere between \$65 and \$125 monthly for the automatic operations described above. The equipment can also be purchased outright. □

# TALC

by Victor Tarbutton

Trunk Automatic Level Control (TALC), employed in CASCADE Trunkline Amplifiers, works just as smoothly as its name suggests. It is the slickest idea yet generated through the combined meditations and investigations of some of the CATV industry's most astute designers.

TALC will soothe the most vexing AGC problem because it is operated directly by the basic cause of system level variation . . . temperature change. Conventional AGC waits for the temperature to cause a change in cable attenuation and upset levels so it can sense the change and apply compensation. In CASCADE gear, the temperature change directly controls the gain compensation of the trunk amplifier.

Uncontrollable level variation at any point in the trunk line is a system operator's sorest spot. Regular AGC methods provide no means of adjusting the degree of control. If the amount of control is not correct, there is but one way to alleviate the discomfort encountered in the operator's in-nards: make the AGC inoperative.

Regular AGC methods require two separate devices to control gain and channel relationship (tilt). CASCADE TALC controls both the gain and tilt simultaneously. It is possible only when amplifiers are designed with tilt-compensated gain controls.

When attempts were made to employ this method in the past,



the main failing was that the control units were placed at every third trunk location. The reason for this is obvious: the AGC units were too expensive to be used at every trunk location where they would provide the most consistent operation.

This wide spacing placed extraordinary demands on the accuracy of the tilt-compensated gain control action, since it had to compensate for attenuation changes on three spans of cable (total: 66 to 75 db). The variations in this length of cable within the design limits of  $-40^{\circ}$  to  $+140^{\circ}$  F. would be as much as  $\pm 6.75$  db, or 13.5 db of gain control. Admittedly, these extremes are encountered in only a few cases, but let us compare the requirements for Trunk Automatic Level Control (TALC) placed in each and every trunk location (we shall call it the Ultimate Method, or TALCUM).

Here, the maximum spacing is 25 db, requiring a range of control of only  $\pm 2.25$  db, or a total swing of 4.5 db (compared to 13.5 db with conventional wide-spaced AGC). TALCUM scores again because the 4.5 db range is well

within the safe gain range of an amplifier. Larger ranges necessitate the acceptance of amplifier degradation . . . an undesirable by-product which leads to operator irritation.

Follow the advice of the old CATV'er R. G. Housedrop\*, who wrote of the CASCADE Trunk Amplifier:

*Learn'd it was in electronical lore  
Replete with strange TALCUM powder  
For by its side a probe it wore  
To keep output levels to  $(\pm)$  one quarter*

\*R. G. Housedrop rose to fame among the all-time great CATV technicians one hot day in August, 1963. It was the first day of a scorching heat wave, and Housedrop had hung in a sweaty safety belt from morning to night, resetting AGC levels. Chafed and sore, he thought that a sprinkle of talcum might ease his bind. Stooped over, and grimacing with pain, R. G. shuffled to his friendly neighbourhood drug store.

Meeting the friendly druggist at the door, Housedrop croaked: "Have you got some talc?"

"Certainly, sir," the druggist replied, starting for the rear of the store. "Just walk this way."

Housedrop didn't hesitate for a moment. "If I could walk *that way*, I wouldn't need the talcum powder."

Cascade TALC (now TLC) was conceived to keep R. G. Housedrop and the countless other CATV technicians on the ground during August heat waves. It works!

## CASCADE

CASCADE ELECTRONICS LTD., PORT MOODY, B.C.

2395 State Street  
Phone (717) 232-4111  
HARRISBURG, Pa

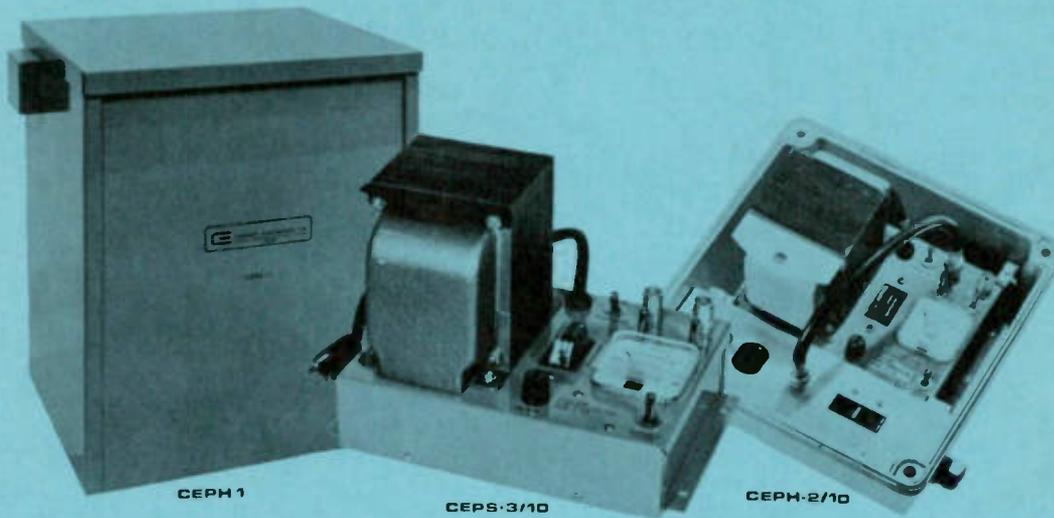
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Here is the cable power supply with the built-in features and extras that belong in today's sophisticated CATV systems. The CEPS is designed for installation in existing weatherproof housings, while the CEPH-1 and CEPH-2 are supplied with weatherproof welded and cast aluminum housings, respectively. Each power supply has built-in four-way surge, transient and overload protection, including a self-healing Thyrite lightning arrestor which will handle as many as twelve surges before needing replacement. The built-in ammeter will prove valuable as a maintenance and troubleshooting aid.

# CEPS CEPH

## CASCADE POWER SUPPLIES



### FEATURES:

- Silent, heavy-duty transformer.
- Cool-running, conservatively-rated components.
- 5-amp or 10-amp models available.
- Power duplexer adds AC to through-cable.
- All standard fittings available.
- Separate switches power either or both output connections.
- Rugged self-resetting thermal circuit breaker.
- Standard 3AG fuse for positive primary protection.
- Low-voltage neon transient suppressor.
- Self-healing Thyrite lightning arrestor.
- RF-filtered 117-volt primary.
- Built-in expanded-scale ammeter, with defeat switch.
- Double-pole primary switch, for complete powerline isolation.
- Convenient lifting/hoisting bracket.

### DIMENSIONS:

CEPS-3/5 - 6½ x 9½ x 5⅞",  
15 lbs.  
CEPS-3/10 - 6½ x 9½ x 6⅝",  
16 lbs.  
CEPH-1 Housing - 14½ x 13¼  
x 11¼", 11 lbs.  
CEPH-2 Housing - 12 x 12 x  
7¾", 17.5 lbs.

### SPECIFICATIONS:

INPUT: 117 volts nominal, 60 CPS.  
OUTPUT: 27 VAC, 5 or 10 amps.  
RETURN LOSS: 25 db, 50-220 MHz.  
INSERTION LOSS: ¼ db maximum 50-220 MHz.  
CONNECTORS: 75 ohm.  
METER: 0-10 amp, expanded scale, push-to-read.

### PRICES:

CEPS-3/5 5-amp supply .....	\$109.50
CEPS-3/10 10-amp supply .....	119.50
CEPH-1 Welded Housing only .....	65.00
CEPH-1/5 5-amp supply in welded housing .....	165.00
CEPH-1/10 10-amp supply in welded housing .....	165.00
CEPH-2 Cast Housing only .....	65.00
CEPH-2/5 5-amp supply in cast housing .....	165.00
CEPH-2/10 10-amp supply in cast housing .....	165.00

All specifications subject to change without notice.

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# Maintenance and Operation of Videotape Recording Equipment

By Jim Cook

Ampex Corporation

Just as in broadcasting, where videotape recording solved the major problem of time delay of programs, the newest generation of closed circuit videotape recorders is helping CATV operators tackle one of their greatest challenges — local program origination.

Local programming is fast becoming a valuable community service of CATV operators across the country. This is just as true in the metropolitan areas as in sparsely populated regions where network television and major radio stations and newspapers cannot possibly give full attention to local activities.

The variety of programs being presented on cable television is endless. City Council meetings, service club meetings, high school football and basketball games, political talks and spot news coverage are all being brought into the homes of subscribers by CATV systems. In all types of program origination, videotape recorders are used to record the action for later or repeated playback.

Availability of new low cost closed circuit videotape recorders is an important stimulant to local CATV programming. Videotape recording enables special interest local programs to be piped into homes at convenient viewer times, and, in the case of particularly significant programs, to be played back several times to assure all viewers of a chance to see the program. Politicians, celebrities and other newsmakers can be recorded at their convenience for later showing. And production costs to the operator are modest.

For a CATV system operator to get maximum mileage from his videotape recorder, some under-

standing of the principles of videotape recording is necessary.

A VTR records moving pictures and sound on reels of magnetic tape much as a conventional audio tape recorder records sound. Audio tape recorders record sound either from microphones, from a radio receiver, or by duplication from another recording. Similarly, videotape recorders record television pictures from a television camera, from a television receiver, or by duplication from another recording. In addition, sound tracks on the video tape itself permit audio recording from a microphone or television audio recorder on the same tape with the television pictures.

In both audio tape recording and videotape recording, the basic method is the same. Sound or visual images are converted to electrical signals by a microphone or camera. The electrical current varies in direct relation to the sound or picture and produces a comparable varying flux in the recording head. A plastic tape coated with iron oxide is passed through this changing magnetic field. The iron oxide particles on the tape are thus magnetized in specific patterns which correspond to the original sound or picture. When the process is reversed, and the electrical signal detected from the tape is amplified through a speaker or television tube, the original sound or picture is reproduced.

Just as with the audio recorder, video tapes may be played back immediately without processing. Tapes may be erased on the recorder, in part or entirely, and re-used hundreds of times without loss of quality.

Audio tape recorders provide high fidelity stereo music at frequency responses up to 18,000

cycles per second. Much higher frequencies are required to record television pictures. Ampex studio videotape recorders for the broadcast industry record at more than 5,000,000 cycles per second. An Ampex VR-7000 closed circuit videotape recorder, as used by CATV systems, records at approximately 3,500,000 cycles per second.

Frequency response is directly related to the speed at which tape moves past recording and playback heads. In audio recorders, tape moves past the heads at 7-1/2 inches per second, the accepted standard speed for high quality performance. Slower speeds of 3-3/4 and 1-7/8 ips also are used, but provide relatively lower quality. In making the transition upward from audio recording frequencies to video recording frequencies, engineers have used three basic techniques to increase the relative tape to head speed.

Most broadcast stations today use videotape recorders employing the transverse recording technique, the method used in the first practical videotape recorder invented by Ampex in 1956. Transverse recorders have four record/playback heads mounted on a rotating disk which produce the necessary tape to head speed. These recorders are large studio models and cost between \$30,000 and \$110,000, well beyond the reach and need of most CATV systems.

The simplest form of recording is longitudinal recording, in which the tape is moved past stationary heads at very high speed. Because of the large amounts of tape needed, and because picture quality is generally inadequate, this type of video recording is not used much today.

Most closed circuit videotape recorders on the market today

employ the helical-scan technique. In this case, one or two record/playback heads are mounted on a moving drum and record across the moving tape in a diagonal curve known as a helix. Actual tape speeds vary, usually in a range between 3.75 to 9.6 inches per second. Tape widths vary from one-half to two inches. In this manner, relative tape to head speeds of from 650 to 1,000 inches per second are produced, creating frequencies of up to 4,200,000 cycles per second. In some instances broadcast quality and color recordings are possible at this frequency.

The CATV operator can produce video tapes for an investment of less than \$3,000. The basic equipment is a videotape recorder, a closed circuit television camera, a television receiver for monitoring the recording, a microphone for adding the audio, and at least one reel of video tape. Thus prepared, it is a simple matter to record and play back television programs.

Key piece of equipment in this

system is the VTR, which if properly set up and given normal maintenance, should provide trouble-free recording for many years.

It must be remembered that a videotape recorder is a precision mechanism and requires occasional maintenance. Periodic preventive maintenance can vastly reduce the chance of any major failure. Maintenance such as cleaning the heads, slip rings, belts and checking reel tension will lessen the need of major maintenance. Belts should be replaced when they are worn or have stretched. The video head should be checked after 100 hours of operation for proper tip projection. The tape guides normally will not require adjustment unless abused.

The most frequent cause of trouble, and one which can easily be avoided, can be traced to the heads. The heads, including the video head located in the rotating drum, must be cleaned at regular intervals. Manufacturers recommend that the heads and tape

guides be cleaned after approximately eight hours of recorder use. Regular head cleaner should be used on heads and tape guides, with cotton swabs, which can be obtained at any drugstore, used to apply the cleaner.

The rubber capstan located at the front of the head drum should not be overlooked. Isopropyl (rubbing) alcohol should be used to clean the capstan, as other cleaning agents may cause the rubber to harden and make capstan replacement necessary.

Next to a systematic program for cleaning the heads, probably the most important preventive measure to assure a good working recorder is demagnetizing the heads. Let's use the Ampex VR-7000 recorder as an example. Of the five heads in the VR-7000, only three must be demagnetized. They are the video head in the rotating drum, the audio record head, and the control track head. First, connect the demagnetizer to 115 volt, 60 cycle power. Then hold the demagnetizer

## HANDLING AND CARE OF VIDEO TAPE

(1) Store video tape under moderate temperature and humidity conditions. A controlled environment is ideal, but video tape does well under "people" conditions.

(2) Rewind video tape with the proper tension to get a good tape pack and to avoid uneven winding and slipping.

(3) Allow video tape reels to coast to a stop after playing or rewinding. Do not stop the tape by pressing on the reel, as this can cause tape slippage, windows or cinching.

(4) Thread video tape carefully around the guides and head drum to prevent damage from scratches, tears and stretched edges.

(5) Lift video tape from the box by the hub or by the lower flange. A reel should **never** be handled by squeezing the flanges for this can damage the tape edge if the windings are uneven.

(6) Store video tape in a video box with a hub support. Do not stand reels upright on the flange edges. Tape should always be in one of two places - either on the

transport or in the proper box.

(7) Store video tape boxes standing upright. Do not lay video tape flat except when it is on the recorder.

(8) Handle video tape carefully, do not drop a reel.

(9) Do not remove video tape from the guides, capstan, or head drum in the middle of a reel. Wind all the tape onto either the supply or take-up reel first to avoid damaging the tape.

(10) Remove video tape from the recorder by reaching under the reel from two sides and lifting. Do not lift by the top flange or by squeezing the flanges together.

(11) Use masking tape to hold the end of the tape. Do not use end tabs which leave a residual adhesive on the tape.

(12) Do not write on the end tab while it is on the reel of tape. The writing pressure dents many layers of tape, causing poor recording and playback in these areas.

(13) Use the proper video recording head top projection. Too much projection can damage the tape, too little can cause poor performance.

(14) Keep the video recorder clean. Wipe the guides capstan, and heads with an approved solvent and a cotton swab. Dirt and oxide buildup can cause poor recording and tape damage.

(15) Keep video tape clean. Store tape in the original box when not in use.

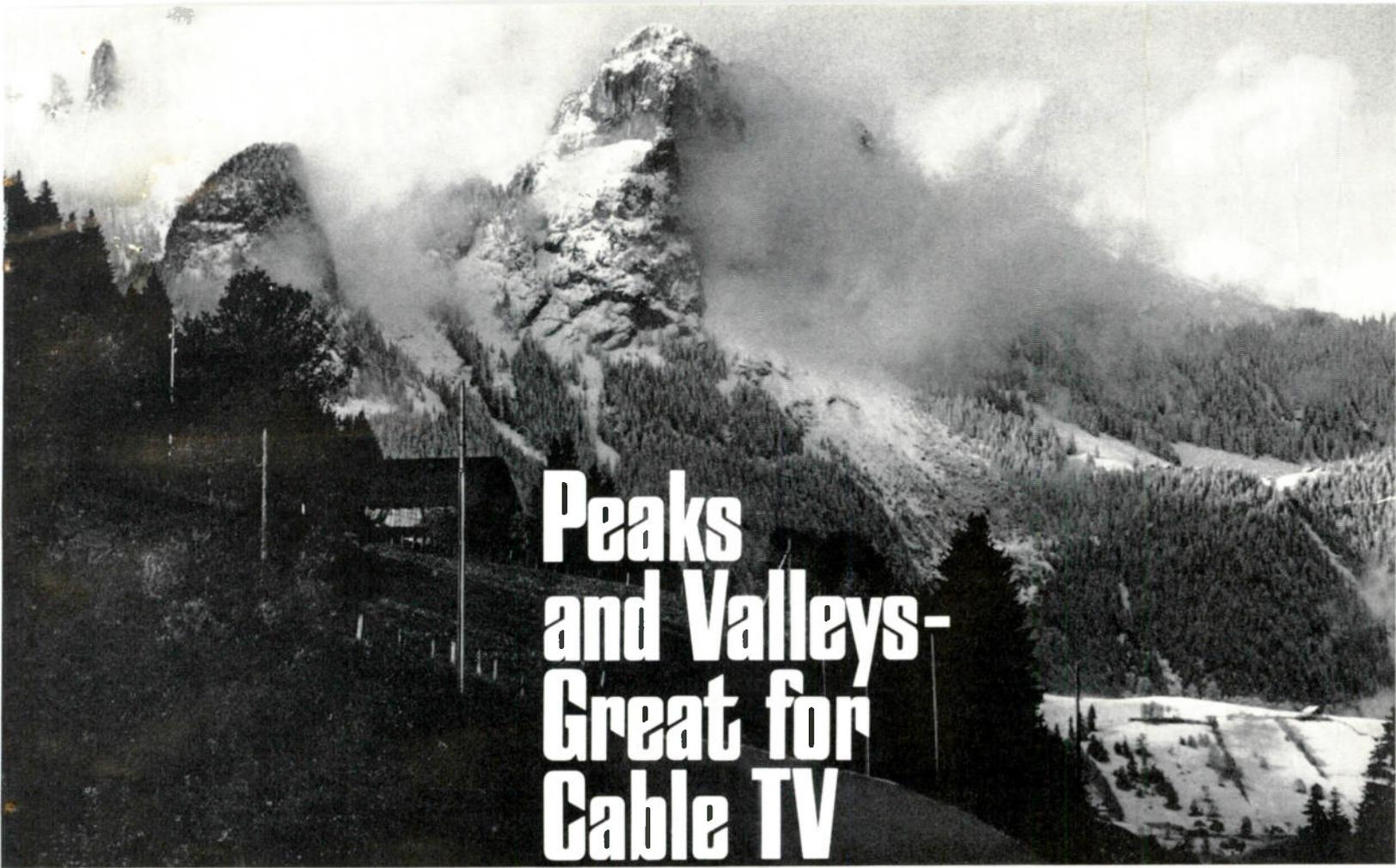
(16) Cut off the wrinkled and damaged end of a reel of video tape. Do not thread wrinkled tape around the head.

(17) Do not stop the tape in the middle of the reel without releasing the tape tension, except to still-frame.

(18) Get the best tape pack by rewinding the video tape from end to end. This insures more uniform tension throughout the reel.

(19) Normalize the temperature of a reel of video tape that has been exposed to high temperature during shipment or storage by placing it near the recorder for at least 4 hours.

(20) Avoid splicing video tape whenever possible, but in those instances where splices are necessary, they should be made very carefully to avoid damaging the tape during operation.



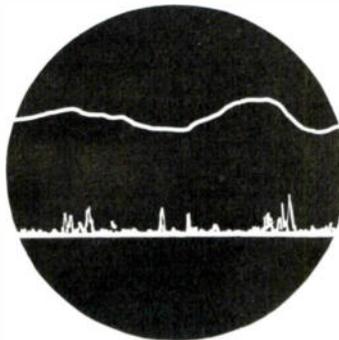
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# Terrible in a CATV Cable

transmission right from the start. No costly ship-backs. No costly re-installation. There are fewer splices, fewer trouble points, less maintenance and less labor costs with Alumifoam because it's made in continuous seamless lengths up to ½ mile. Because it's seamless, it's waterproof and vapor-proof. And Alumifoam's long life is a real bonus—continuous high-performance quality for years and years. Be sure of the cable in your Cable TV. Get in touch with Times. Times Wire and Cable/a division of The International Silver Company/Wallingford/Conn.



  
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## Troubleshooting Your Ampex VR-6000 Or VR-7000 Series Videotape Recorder

Symptoms	Cause
All controls inoperative, pilot lamp does not light.	Recorder is not connected to primary AC power; a fuse on the rear panel is defective.
Push buttons do not operate, pilot lamp is lighted.	18 pin dummy plug is not inserted into rear panel; Thread/Ready control is in Thread position.
Recorder cannot be put into either Fast Wind position.	Thread/Ready control is in Thread position.
Play push button inoperative.	Play/Record levers set to Record position. 18 pin dummy plug is not inserted into rear panel.
Record push button inoperative.	Play/Record levers set to Play position. 18 pin dummy plug is not inserted into rear panel.
Head drum will not rotate. Pilot lamp not lighted.	5 ampere fuse at rear panel defective; 1 ampere fuse at rear panel defective.
Head drum will not rotate, pilot lamp lighted.	Tape stretched too tight around drum.
Video playback very noisy; playback level low. Sound normal.	Video Head clogged - clean with head cleaner. Gap smeared on Video Head - Contour head with green tape. If problem persists, replace Video Head.
Video playback has bend at top of picture.	Improper adjustment of Tension control. Check horizontal hold control on monitor.
Video playback has many dropouts of at least several lines.	Improper adjustment of Tracking control. Defective tape.
No "E to E" during record mode. Record level meter is at zero.	Video Record Level control set counterclockwise; no video input to rear panel.
No "E to E" during record mode. Record level meter indicates at 100%.	Troubleshoot video circuitry from head driver backwards to demodulator.
"E to E" signal during record mode. However, during playback mode no video is displayed on monitor.	Defective or clogged video record head; defective relay in head driver circuitry.
Head drum "hunts" excessively during playback only.	Control track is not being erased from previous recording; dirty erase head. No control track signal, dirty control track head.
Recorder will not play a tape made on another recorder.	Dirty tape guides, capstan or drum; check interchange quality using interchange tape.
Speaker dead.	Playback Level set counterclockwise; switch at rear panel set to line position.
Audio Line Output dead.	Switch at rear panel set to Speaker position.
Dropouts of several lines or more, locked to the field frequency, appear on the monitor. Picture generally unstable.	Defective or dirty brushes and commutator. Clogged video head.

close, but not touching, the head being demagnetized. Slowly move the demagnetizer up and down along the face of the head, then, still slowly, withdraw the demagnetizer until it is about three feet away from the head before removing power from demagnetizer. This should be done after each eight hours of recorder use.

A regular program for cleaning and maintaining a videotape recorder will contribute to the long life of the recorder and provide the CATV operator with hundreds of hours of trouble-free use. An accompanying chart will help the VTR owner spot and diagnose the most frequent troubles which can be fixed without calling in a manufacturer's technician.

One of the most critical elements in producing good video tapes is the tape itself. Video tape should be handled, stored and used in such a way to get maximum mileage from both the recorder and the tape. Some hints on the care and handling of video tape are listed elsewhere.

In producing professional video tapes, the video camera is all-important. There are many video cameras available on the market today. One basic difference is the type of synchronizing pulses or "sync" produced in each. The three major types of sync are: EIA sync, 2 to 1 interlace and random interlace. The Federal Communication Commission requires the EIA type sync for commercial broadcast use.

In the camera, each picture is formed by two "fields" or 262 1/2 scanned lines to result into a "frame" having a total of 525 scanned lines. In the EIA type sync, each of the 525 lines are always spaced evenly apart. The lines will occur at the same place each time and appear stationary to the eye. In the 2 to 1 interlace type sync, the lines are kept an equal distance apart. Whereas, in the random interlace camera, as it sounds, the lines may join or pair resulting in poor resolution.

Two preventive steps should be taken to protect the sensitive vidicon tube inside the camera. The camera should not be pointed directly at the sun or other extremely bright light, which will burn the vidicon. And it should

not be jarred or dropped. Any strong vibrations will shake minute particles onto the target, the piece of photo-conducting material inside the tube, and contaminate it. One sure way to extend the life of the camera is to always cap the lens when the camera is not in use. Vidicon replacements should be shipped and stored with the target always pointing upward, never downward.

Finally, in producing a quality video tape, whether a simple interview or a football game, certain elements of production should be considered. Of prime importance is lighting. In video-taping outdoor activities, such as a football game, set the camera lens between f/11 and f/22 when conditions are bright. Cloudy days or twilight lighting will require a smaller f/stop.

Indoors, there are four basic types of lighting to illuminate a setting.

(1) *Basic light*, about 200 foot candles, is used for general scene illumination. Lights are set on a horizontal plane and directed into a set from above.

(2) *Fill-in light* separates the main person or action from the background and adds depth to the video picture. Lamps are set as high as the top of the background set and aimed behind the central theme toward the camera. About 200-300 foot candles of light are required.

(3) *Eye light* is directed at the person being televised, generally from a baby spotlight. It shouldn't be used on a person wearing glasses. About 100-200 foot candles of light are required.

(4) *Key light* eliminates the shadows underneath a person's chin and nose created by back light. It comes from a predominate light source, generally about 200-300 foot candles of light, located usually high and to one side of the main action.

There are a good many other tips to staging a professional video tape. For instance, television technicians have accepted a 10-value tonal system as the basis for black and white tones in a TV image. Whatever is selected to be part of the TV image is governed by this gray scale. Any contrast greater than 5-to-1 between adjacent parts of the TV image is to be avoided. If a broader contrast is allowed, the image on the screen tends to streak. To eliminate this, the background should be reduced in tonal quality to a middle gray.

If you use flip cards, they should be medium gray and measure about 16-inches by 12-inches to maintain the 4-to-3 proportion of the TV screen. When preparing to televise a series of flip cards, get the last one in focus first and the others will fall into place.

Backdrops should be darker than flesh tones. To achieve

variety and depth, curtains with vertical folds are preferred. You should avoid bright or busy patterns. The floor should have a simple pattern and be light in color.

Unbroken horizontal lines will cause streaking of pictures, and are to be avoided at all costs. Drapes, vines, ropes or nets can be used to break up horizontal lines in your set.

Also, persons being televised should avoid wearing a starched white shirt or blouse. Light blue, yellow or tan come across much better in television. Suits and dresses should be medium gray in color. Tweeds, coarse herring-bones, plaids and simple broad patterns are satisfactory. Sequined materials, satin, patent-leather shoes, belts, handbags and other such accessories should be avoided.

In the last analysis, the quality of tapes produced by the CATV system operator depend on the personnel involved in the CATV system. Knowing the videotape recorder, its capabilities and its limitations, is important. Techniques in producing video tapes will improve with experience, as the operator learns what results in a good picture and what does not. However, with a basic understanding of videotape recording and good production techniques, video tape can become an essential element of the local programming schedule of any CATV system. □

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Official FCC report, on the revenues and profits of U.S. TV stations last year . . .

# 1966 Telecasters' Financial Data

The following report is excerpted from a public notice release last month by the Federal Communications Commission. Pre-tax profits for 1966 are up from 8 percent in 1965 to 10 percent, with gross revenues showing a similar increase; this despite the alleged "economic impact" of cable television on broadcast operations. In the words of the FCC:

"The television broadcasting industry (including the 3 networks, their 15 owned and operated stations, and 593 other stations) reported revenues of \$2.2 billion, and pre-tax profits of \$492.9 million for the calendar year 1966 — increases of 12 percent and 10 percent, respectively over the figures for 1965. Total time sales of \$1,835 million were up \$161 million over last year. Network, national spot, and local time sales all increased — but the proportionate share of network time sales continued to decline.

"The UHF stations as a group increased their revenues by 20.3 percent compared with 9.6 percent for the VHF stations. However, the UHF stations as a group reported losses of \$7.4 million compared with only \$0.2 million of losses last year and profits of \$2.7 million in 1964, largely reflecting the experience of new independent UHF stations in the major markets with substantial expenses. Between 1965 and 1966 there was an increase of 14 percent in the number of UHF stations but the total expenses for all UHF stations increased by 35 percent.

"Profitable operations were reported by 87 percent of the VHF stations (the same as last year) and by 59 percent of the UHF stations (compared to 66 percent in 1965). There were 116 stations reporting profits of \$1 million or higher — 4 more stations than 1965; 61 percent of the VHF stations and 21 percent of the UHF stations reported revenues of \$1 million or more.

"The median revenue of profitable VHF stations was \$1,553,043. The median revenue for profitable

UHF stations was \$771,431. Median revenues for stations reporting losses were \$431,971 for VHF stations and \$264,949 for UHF stations. The median revenue for profitable VHF stations in one-station markets was \$529,338, compared with \$4,527,588 for profitable VHF stations in markets with four or more stations.

"The five largest TV markets — New York, Los Angeles, Chicago, Philadelphia and San Francisco — had about 5 percent of the total number of stations, but accounted for 29 percent of total station revenues, 37 percent of the total national spot business, and 49 percent of total station profits."

## Individual TV Market Data - 1966

Shown in the following table are statistics released by the FCC along with the comments above. "Total Broadcast Revenues" consist of total time sales less commissions plus talent and program sales. "Total Broadcast Income" represents income before Federal income tax. Asterisk (\*) indicates data withheld to maintain confidentiality of individual station figures.

TV Markets	Total Stations Reporting	Total Broadcast Revenues	Total Broadcast Expenses	Total Broadcast Income
Albany-Schenectady-Troy	3	8,416,374	5,550,671	2,865,703
Albuquerque	3	3,470,671	3,060,930	409,741
Amarillo	3	2,922,160	2,878,264	43,896
Atlanta	3	14,158,294	8,187,212	5,971,082
Bakersfield	3	2,058,473	2,226,048	-167,575
Baltimore	3	15,752,703	9,597,929	6,154,774
Bangor	3	1,691,022	1,599,261	91,761
Beaumont-Port Arthur	3	2,506,442	2,005,713	500,729
Binghamton	3	2,945,515	2,135,180	810,335
Birmingham	3	8,345,730	3,558,430	4,787,300
Boston	4	35,513,590	16,576,891	18,936,699
Buffalo-Niagara Falls	3	15,825,760	8,470,335	7,355,425
Cedar Rapids-Waterloo	3	3,815,088	3,070,980	744,108
Charleston-Oak Hill-Huntington, W Va -Ashland, Ky.	4	6,372,460	3,999,523	2,372,937
Charleston	3	2,320,513	1,845,456	475,057
Charlotte	3	8,285,296	5,430,810	2,854,486
Chattanooga	3	2,959,843	2,220,028	739,815
Chicago	6	72,160,764	48,319,665	23,841,099
Cincinnati	3	14,090,947	7,652,146	6,438,801
Cleveland	3	28,524,335	14,058,959	14,465,376
Colorado Springs-Pueblo	3	2,061,744	1,871,477	190,267
Columbia	3	2,786,251	1,709,205	1,077,046
Columbus	3	12,244,874	7,098,501	5,146,373
Corpus Christi	3	2,122,207	1,889,834	232,373
Dallas-Fort Worth	4	20,797,949	12,817,137	7,980,812
Davenport-Rock Island-Moline	3	4,489,528	3,687,422	802,106
Dayton	3	8,943,698	4,585,659	4,358,039
Denver	4	10,757,807	9,178,380	1,579,427
Des Moines-Ames	3	5,018,464	3,828,220	1,190,244
Detroit	4	29,974,441	17,168,441	12,806,000
Duluth-Superior	3	2,981,107	2,374,725	606,382
El Paso	3	2,578,513	2,465,430	113,083
Erie	3	2,301,396	2,212,292	89,104
Evansville	3	3,174,048	2,224,670	949,378
Fargo-Valley City	3	2,805,329	2,752,822	52,507
Flint-Saginaw-Bay City	3	6,011,876	4,595,505	1,416,371
Fort Wayne	3	3,338,116	2,526,346	811,770

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**GenCoe could have used a large diameter  
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**But, three quarter inch Spirafil® II carried the signal farther,  
eliminated a pair of head ends and cut down on amplifiers.**

GenCoe, recognized as one of the leading CATV system operators in the country, was using 3 separate head ends in Abilene, Texas. When rebuild was called for they could very well have used a large diameter foam dielectric cable. But, they didn't. By installing 36,000 feet of Spirafil II, which allowed them to carry the signal over far longer distances, GenCoe was able to eliminate two head ends and a microwave feed and serve the entire community with a loop from the remaining central head end. GenCoe had been running 1,500 foot lengths through 23 amplifiers. Now, they are running lengths of Spirafil II up to 2,600 feet and have reduced the number of amplifiers to 14.

What is it that makes Spirafil II so different? Basically, the important design innovation is a solid polyethylene helix which completely covers

the solid copper center conductor without interruption. In addition to great mechanical stability and an absolutely non-collapsible helix, Spirafil II offers lower attenuation, 32 db return loss and a good deal less maintenance. And, Spirafil II offers a system cost very competitive with conventional foam cables.

Why not do what GenCoe did? Check into Spirafil II, available plain or jacketed in .412 inch, .500 inch and .750 inch diameters, 75 ohm impedance, in 1,000 foot reels.

*For complete details on new Spirafil II and listings of our Sales-Service-Stocking Centers across the country, write, wire, TWX or telephone, Phelps Dodge Copper Products Corporation, 300 Park Avenue, New York, New York 10022. Telephone (212) 751-3200. TWX (212) 867-7455.*

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TV Markets	Total Stations Reporting	Total Broadcast Revenues	Total Broadcast Expenses	Total Broadcast Income	TV Markets	Total Stations Reporting	Total Broadcast Revenues	Total Broadcast Expenses	Total Broadcast Income
Fresno-Hanford-Visalia	6	4,611,746	4,203,182	408,564	Peoria	3	3,516,962	3,244,529	272,433
Grand Rapids-Kalamazoo	3	8,884,683	5,362,581	3,522,102	Philadelphia	6	43,483,095	26,832,297	16,650,798
Green Bay	3	3,831,798	3,411,780	420,018	Phoenix-Mesa	4	7,960,118	6,129,157	1,830,961
Greensboro-High Point-Winston Salem	3	5,511,122	4,039,579	1,471,543	Pittsburgh	3	24,036,805	13,506,925	10,529,880
Greenville-Washington New Bern	3	2,877,830	2,345,220	532,610	Portland-Poland Springs, Me	3	3,996,698	3,910,870	85,828
Greenville-Spartanburg -Asheville	4	5,063,719	3,272,508	1,791,211	Portland, Ore	4	10,704,944	8,014,814	2,690,130
Harrisburg-Lancaster-York-Lebanon	5	6,068,995	4,253,660	1,815,335	Providence-New Bedford	3	8,873,442	6,917,025	1,956,417
Hartford-New Haven-New Britain-Waterbury	4	14,664,055	7,551,948	7,112,107	Richmond-Petersburg	3	4,505,017	3,707,415	797,602
Hilo	3				Roanoke-Lynchburg	4	3,524,115	3,280,603	243,512
Honolulu	4	5,247,401	6,551,293	-1,303,892	Rochester	3	5,992,606	4,846,159	1,146,447
Houston-Galveston	3	15,113,285	8,318,707	6,794,578	Rochester-Austin, Minn-Mason City, Iowa	3	2,148,690	1,595,339	553,351
Huntsville-Decatur	3	1,287,596	1,081,655	205,941	Rockford-Freeport	3	3,300,045	2,896,437	403,608
Indianapolis-Bloomington Jacksonville	4	16,717,816	9,841,479	6,876,337	Sacramento-Stockton	3	10,775,379	8,806,523	1,968,856
Johnstown-Altoona	3	4,032,254	2,509,306	1,522,948	Salt Lake City-Ogden-Provo	3	6,011,810	5,290,119	721,691
Kansas City	3	13,168,779	7,397,950	5,770,829	San Antonio	4	6,377,142	4,997,825	1,379,317
Knoxville	3	3,826,940	2,688,473	1,138,467	San Diego	3			
Las Vegas-Henderson	3	2,438,396	2,176,807	261,589	San Francisco-Oakland	4	41,501,957	19,853,162	21,648,795
Lincoln-Hastings-Kearney	5	3,291,294	2,620,445	670,849	Seattle-Tacoma	5	14,876,069	9,922,208	4,953,861
Little Rock	3	4,141,848	3,686,386	455,462	Shreveport-Texarkana	3	4,213,036	3,666,514	546,522
Los Angeles	9	92,610,148	61,105,599	31,504,549	South Bend-Elkhart	3	2,738,503	2,238,150	500,353
Louisville	3	8,241,679	5,188,687	3,052,992	Spokane	3	3,979,902	3,425,756	554,146
Madison	3	2,865,804	2,078,501	787,303	Springfield-Decatur-Champaign Urbana-Danville	5	5,651,174	4,205,719	1,445,455
Memphis	3	7,966,054	4,503,895	3,462,159	St Louis	4	18,835,830	12,635,053	6,200,777
Miami	3	15,540,068	8,813,159	6,726,909	Syracuse	3	7,819,114	5,260,119	2,558,995
Milwaukee	4	13,805,685	8,935,761	4,869,924	Tampa-St Petersburg	4	9,187,183	6,540,563	2,646,620
Minneapolis-St Paul	4	18,135,133	12,599,510	5,535,623	Toledo	3			
Mobile-Pensacola	3	3,872,535	2,981,641	890,894	Tucson	3	2,534,599	2,551,050	-16,451
Montgomery	3	2,400,132	1,915,363	484,769	Tulsa	3	6,091,698	4,743,286	1,348,412
Nashville	3	7,201,049	5,218,732	1,982,317	Wailuku	3			
New Orleans	3	10,758,364	7,804,889	2,953,475	Washington	6	23,373,780	17,735,780	5,638,000
New York	7	124,224,557	80,162,591	44,061,966	Wichita Falls-Lawton	3	2,489,832	2,159,487	330,345
Norfolk-Portsmouth-Newport-News-Hampton	3	6,252,358	5,073,105	1,179,253	Wichita-Hutchinson	3	5,396,512	4,396,138	1,000,374
Odessa-Midland-Monahans	3	2,023,026	2,028,890	-5,864	Wilkes Barre-Scranton	3	4,111,621	3,708,628	402,993
Oklahoma City-Enid	4	8,542,032	6,615,528	1,926,504	Youngstown	3	2,665,444	2,383,306	282,138
Omaha	3	6,307,198	4,881,877	1,425,321	San Juan-Caguas, Puerto Rico	5	6,906,996	5,982,653	924,343
Orlando-Daytona Beach	3	4,591,305	3,421,209	1,170,096	Totals 110 Markets	381	1,162,251,088	772,656,984	389,594,104
Paduca-Cape Girardeau-Harrisburg	3	2,995,016	1,877,994	1,117,022	Markets Less Than 3 Stations Total 171 Markets	227	136,916,191	112,313,414	24,602,777
					Total 281 Markets	608	1,299,167,279	884,970,398	414,196,881

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FCC denies ATR charges . . . p 5  
Copyright committee meets again . . . p 6  
Jack Valenti discusses copyright . . . p 7

September 18, 1967

# CATV

Weekly News Service of Cable Television



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Because Manhattan Cable Television will soon be installing Focus 12 in New York CATV homes.



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So, to New Yorkers using Manhattan Cable's service this fall, Run For Your Life won't look like a stampede and Ed Sullivan will be doing a single.

Focus 12 will provide 12 crystal clear channels, perfect color reception, and as a bonus, a handsome remote tuner.



Are 12 channels enough?

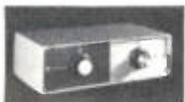
If not, check the Gamut 25.

This ITC gem not only clears the ghosts from your existing 12 channels, but adds up



## and vice versa.

to 13 extra interference-free channels when you're ready to expand. Or, if your present channels are not bothered by ghosts, consider the Plus 13.



The Plus 13 is an economical channel expander that adds up to 13 interference-free channels to your system.

Focus 12, Gamut 25 and Plus 13 are beautifully designed units. And all three offer the bonus selling feature of acting as fully transistorized remote tuners. They're easy to buy, easy to install, and they increase

your sales. Write for full specifications on each unit, or call us at (213) 478-7751.

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# Anaconda Astrodata Company

One of the major electronics manufacturers serving today's fast-growing cable television industry began operations 18 months ago, early in 1966. While its corporate length of life contrasts somewhat with that of some other CATV equipment manufacturers, the quality of the gear it produces and the healthy growth it has had make it one of the main CATV equipment suppliers in the industry today. Its name is the Anaconda Astrodata Company. Its inception was the result of initial market research and planning by Anaconda Wire Cable Company.

During late 1964 and 1965, Anaconda Wire and Cable studied the CATV market regarding product needs and growth possibilities. Sealmetic co-axial cable, an Ana-

conda product, had already found good acceptance in the market. The current objective was to determine if an expanded product line was feasible.

A new concept evolved — one of providing a total range of equipment for CATV systems — beginning with electronic components and following through with distribution cable, integrating the design of all equipment for total quality control in operation. The concept included not only all the electronic gear, cable and hardware that goes into an operating system, but ultimately the test equipment needed to keep it balanced and operating properly.

The Anaconda management team made two basic decisions in turning the concept into action. The first

was to locate an electronics firm with research, development and manufacturing capability geared to suitably high standards. The second basic decision was to draw the marketing/sales personnel from the experienced communication products sales staff at Anaconda. Forehand knowledge of the CATV market was a critical prerequisite.

The search for an electronics manufacturing facility finally narrowed to one firm, Astrodata, Inc. of Anaheim, California. An eight-year-old company, Astrodata had gained a solid reputation in the development and manufacture of military and space-age electronics equipment. In January, 1966, Anaconda Wire and Cable Company and Astrodata, Inc. formed a joint venture in Anaconda Astrodata Company for the manufacture of CATV gear. Astrodata provided the physical plant for the new company near its own complex of design and manufacturing facilities. After a management core was completed, drawing key men from both parent firms and the CATV industry, Anaconda Astrodata was ready to make the new concept become reality. After several months of research and development, the first Anaconda Astrodata CATV amplifiers and associated equipment were introduced in mid-June, at the NCTA convention in Miami.

The equipment was designed around two unique operational concepts intended to increase the efficiency and effectiveness of system operation. The first of these was the development of components enabling an "Automatic Main-trunk System." Intended to minimize the cumulative factors that make field analysis and adjustment



*The Anaconda Astrodata management team (from left) John F. Kinkel, director of engineering; Max C. Woods, assistant comptroller; Dean P. Roberts, sales manager-CATV systems; Ronald C. Mandell, chief engineer-CATV systems; Edward J. F. Regan, president; Alfred L. Ginty, vice president-marketing; Duane W. Crist, sales manager-CATV products; Arie Zimmerman, sales manager-CATV test equipment. (Not shown is Bruce Walters, vice president-manufacturing.)*

# NOW! FIRST WITH THIN-FILM RELIABILITY in Advanced Design CATV Distribution Equipment

Putting up with low-grade color reception on your CATV system? Too bad . . . when you can guarantee stable, reliable, studio-quality color distribution with **COLORVUE**.

**COLORVUE** has state-of-the-art answers to your problem—solid-state trunk-line, bridging and trunk extender amplifiers with

**COLORVUE** produced switchable hybrid micro-circuit equalizers and attenuators that provide higher conductivity, higher reliability than conventional circuits. With ultra-flat frequency response, high output, high gain and 50 to 270MHz bandwidth\*, you'll deliver true color fidelity across all twelve channels . . . with **COLORVUE**.

## NEW! Model CVT-1RB INTERMEDIATE BRIDGING AMPLIFIER

Providing a high-level output where trunk amplification is not required, the CVT-1RB is utilized as a bridging (39db gain) or line terminating (47db gain) amplifier. Up to four feeder lines may be plugged in.



\*Specifications are for 50 to 220MHz bandwidth

## NEW! Model CT-E TRUNK EXTENDER AMPLIFIER

A high-output repeater type amplifier, the CT-E features the same hybrid micro-circuitry as trunk-line and bridging amplifiers. Variable gain attenuation and tilt equalization. 7.5 db noise, 1.38:1 VSWR and  $\pm 0.5$  response flatness assure clean color signals.

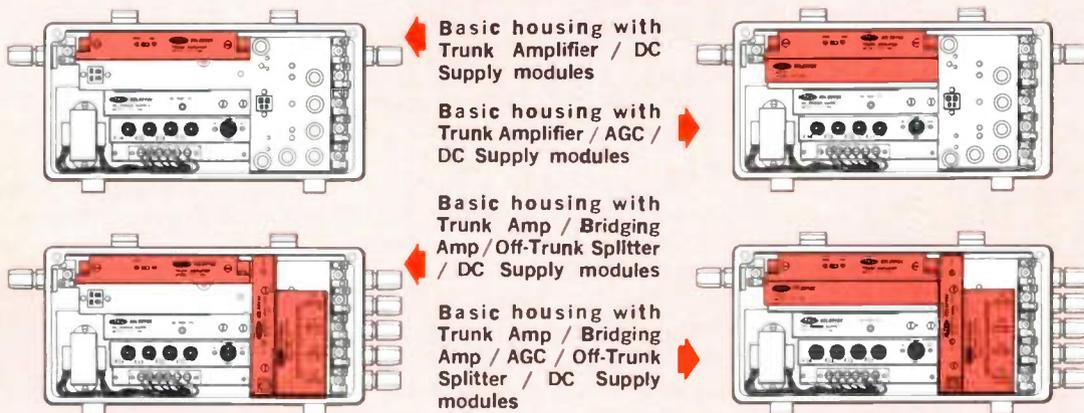


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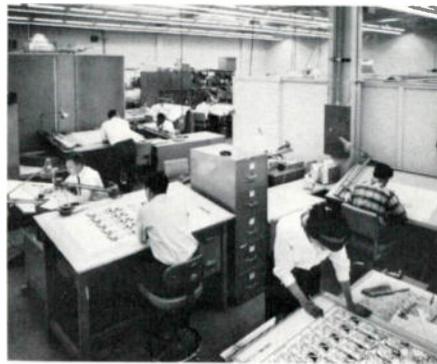


*A staff engineer uses a VHF oscillator and precision RF volt meter to check pre-equalization of distribution amplifier outputs.*

of CATV systems impractical, the equipment was designed to avoid jumper cables and excessive connector links, and to include closed-loop circuitry. In addition, some of the electronic equipment was pre-aligned at the factory. The key features of Anaconda Astrodata amplifier design, following this concept, were (1) factory-aligned AGC amplifiers, (2) built-in correction for deviations in spacing in the field, (3) temperature compensation controls for cable variation with temperature, (4) automatic system level control.

The second major concept forming the basis for Anaconda Astrodata design was a "High Level Distribution System." With the advent of amplifiers having an output capability of as much as 56 dBmv, a new technique in CATV system design was made possible. It had been standard practice to run the main trunk at levels in the vicinity of 35 dBmv, with a bridger

output as high as 40 dBmv, and the distribution system at roughly 30 dBmv. This practice was viewed as opposite from what is desirable for optimum system performance. Anaconda Astrodata engineers felt that, with the distribution amplifier or line extender usually treated as the stepchild of the whole amplifier line as a low-cost circuit, the resulting low-level distribution system was economically unsound. The Anaconda Astrodata concept is that high-level distribution permits more than twice the number of subscribers per amplifier, and that even including directional couplers throughout, it keeps total cost lower than the old low-level distribution system based on low-cost line extenders. The new high level distribution system is based on a distribution level of +43 dBmv; that is, the level of Channel 13 at the output of each distribution amplifier. This new high-level



*Mechanical designers translate schematic diagrams of circuitry into "tape-up" which are made four times the size of the final module. Photographically reduced, they become the master negative for the circuit.*

distribution system reduces the required output of main trunk amplifiers, and it features increased distribution cascading.

Anaconda Astrodata's successes in both engineering concepts and sales volume have been pronounced during the first year of operation. Some \$2 million in turnkey construction and component sales were achieved during fiscal 1966-67, and the firm is well on the way to its 1967-68 sales goal of \$6,500,000. The modern, well-equipped plant in Anaheim now employs some 250 people, working 'round the clock. The variety of CATV products manufactured now numbers over

100 items, including various amplifier models and a growing line of test equipment.

The company has made two recent moves to consolidate operations and increase effectiveness. The first of these was to complete the development of an experienced, top-level management team. In April, 1967, Edward J. F. Regan joined the firm as its new president. Drawing on an extensive electronics and management background as publisher of the *Electronic Engineer* magazine, and *Contractor News* magazine, Regan foresees an unlimited future for the CATV industry, and his goal is to insure that Anaconda Astrodata plays an increasing role in CATV and the integrated communications of the future.

Rounding out the management team are A. L. Ginty, vice president of marketing, one of the men who originally helped organize Anaconda Astrodata, and veteran CATV sales and manufacturing executives Duane Crist, Dean Roberts, Arie Zimmerman, Dick Old, and Bruce Walters.

The second major move to increase company effectiveness was the recent purchase of Astrodata's share of the company by Anaconda Wire and Cable Company. Management anticipates that operational efficiency will be strengthened markedly with corporate control under one roof. While Astrodata has now relinquished its share of control, the aero-space firm will continue to provide further technical assistance in the development of advanced concepts.

Backed by the resources of one of the nation's largest, most respected corporations, Anaconda Astrodata



*A flow-solder machine attaches components to an amplifier circuit module.*

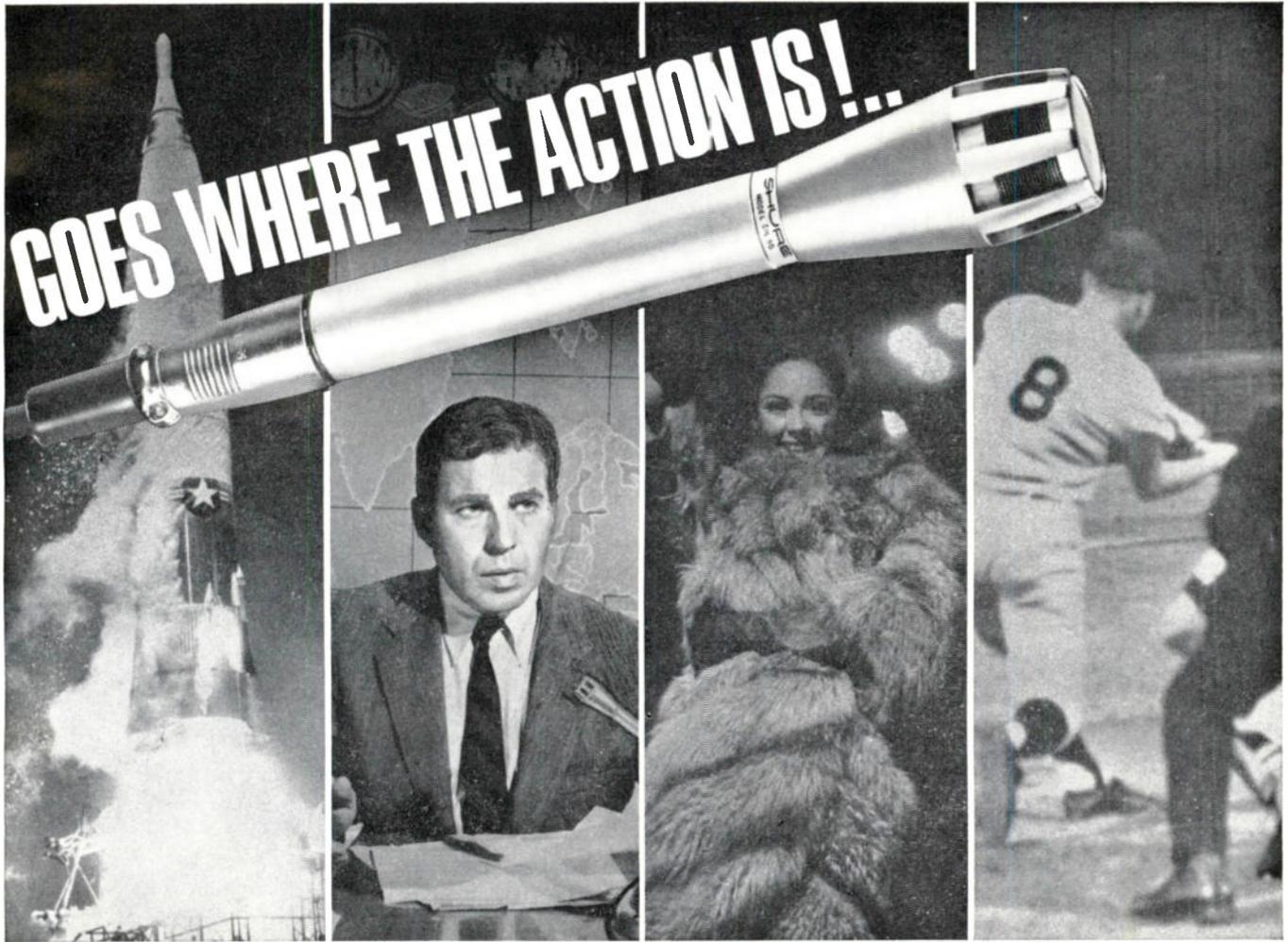
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## SHURE SM60

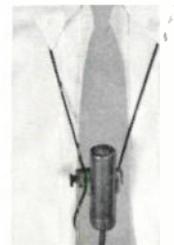
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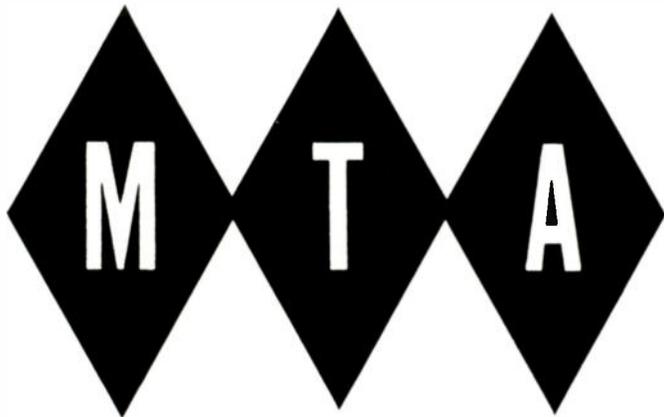
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is unique. Its formation marked the first move by a communications industry giant to diversify and specialize in the manufacture of CATV gear.

The company has made an impressive start in its first 18 months of operation. New items are continually being added to the product line, and the concept of complete integration of system equipment is gradually being realized. The newness for Anaconda Astrodata has worn off. A combination of planned development



*The last mile — test and alignment. All amplifiers are tested both before and after they are installed in housings.*

and effective CATV-oriented management has paid good dividends. The future looks good. As president Regan states:

“The explosive growth expected for CATV, is already taking place. Franchises are now being issued at an increasing pace and the number of turnkey systems we’ve been asked to bid has increased by 50% in the last month alone.

“We are most excited about the prospects for additional uses of the CATV plant and equipment. Thirty-one of our people work in R & D to develop communication products for the future.

“The CATV industry has had its baptism. It is now mature, and indicates a need for another major corporation, working toward a total communications concept, to provide reliable products, within a dependable time framework, and with a meaningful warranty for product performance. Anaconda Astrodata backed by the resources of Anaconda Wire and Cable intends to fill this need.” □

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## The EVR . . . . . . and CATV

By Charles Wigutow

With the development of Columbia Broadcast System's electronic video recorder at a price within reach of the average owner of a TV set, visual recordings can be seen as coming into the same category as long play records in the home.

How will this affect cable television? To those who ask the question, one can direct their attention to the effect of the long play records on radio broadcasting. The radio industry is booming, and so are the record and record player industries. One instrument in the home does not eliminate the use of the other. On the contrary, more time is made in the life of the music appreciator to use both sources of audio entertainment.

The greater appeal of cable TV to most subscribers is in its ability to present a choice from many programs at any one time. The most comprehensive library of video tape recordings cannot supplant a continuous choice of eight, ten or twelve channels. We must not forget that such a comprehensive library will be a costly affair, far more costly than the general monthly charge of CATV service. And nothing but broadcasting, whether, off the air or by cable, can come through with the feeling that what is taking place is happening this very instant.

I cannot foresee that CBS's EVR can ever impair the economic prospects of CATV, any more than the proliferation of records has harmed audio broadcasting. It might even become another source of programming for cable's closed circuit channels; and so will be adding one more service that CATV will be providing to its subscribers. □

## CATV System Construction

**Attala, Ala.** — Construction of the 200-foot tower is finished in Attala and several sections of the city are already receiving cable service, according to Al Williams, chief engineer for Video Cables, Inc. of Huntsville.

**Helena, Ark.** — Hook-ups have already been made for 80 subscribers and 20 more are to be made in the near future, according to Gregg Cablevision Company.

**Perris and Booneville, Ark.** — The contract has been let for the construction of the two-systems to the Comm/Scope Division of Superior Cable Corp. The systems are owned by the Western Arkansas Telephone Company and will involve more than 40 miles of plant.

**Port McNeill, British Columbia** — The contract has been let for system construction to B.C. Cable contractors. The system is owned by Cominco Ltd of Port McNeill.

**Desert Hot Springs and Perris Valley, Calif.** — Plans have been made by Video Communications to begin construction soon. \$1,500,000 has been earmarked for the two southern California systems

**Riverside, Calif. and Boone, N.C.** — Construction starts have begun recently by Ameco, Inc. The Riverside contract calls for immediate construction of the first 40 miles of the 100 mile plant.

**Clewiston, Fla.** — Clewiston Community Television Cable Company, Inc. has begun subscriber drops on the 7-channel system. The system has a 600-foot tower.

**Rome, Ga.** — The first phase of construction has been completed and service is scheduled to begin October 15th, according to Hugh Smith, general manager of Rome Cable TV Co.

**Fulton County, Ill.** — The 350-foot tower and the head-in building are to be erected north of Canton, Illinois. Construction of the system's 35 miles of cable has begun.

**Seneca, Kan.** — Cable service has begun in Seneca, according to Phil White, general manager of the system.

**Farmington, Maine** — Construction of the 100-foot twin towers has been completed and service is to begin in the near future. The system is owned by the Franklin Cable Television Corp.

**Joplin, Mo.** — Construction is well under way on the new system. 400 cold-taps were made early in construction to provide faster service in connecting subscribers. The system is owned by Midwest Cablevision.

**Webb City, Mo.** — Seven-channel service has begun according to John Hilpert, manager of Midwest Cablevision Inc. The Jerrold-installed system also has a weather/music channel and is scheduled for 9 channels in the future.

**Tecumseh, Neb.** — Service has now been initiated according to TV Transmission, Inc., a subsidiary of Lincoln Telephone & Telegraph Co. The system offers subscribers free installation for a trial period of 2 to 4 weeks.

**Zanesville, Ohio** — Tower construction and pole rearrangements for the 125-mile plant have already begun. When completed, the system will be the largest in southeastern Ohio and the third largest in the state. It will also be one of the first systems to provide channels for traffic and emergency use. The system is owned by Better TV, a subsidiary of Vikoa, Inc.

**Aliquippa, Pa. and Ambridge, Pa.** — Construction is to have begun recently by Centre Video. The company also expects to begin construction in November on systems in the Midland-Industry-Ohioville areas.

**Rochester, Pa.** — Construction began recently on the Vikoa-owned system. 88 miles of plant will pass 10,000 homes.

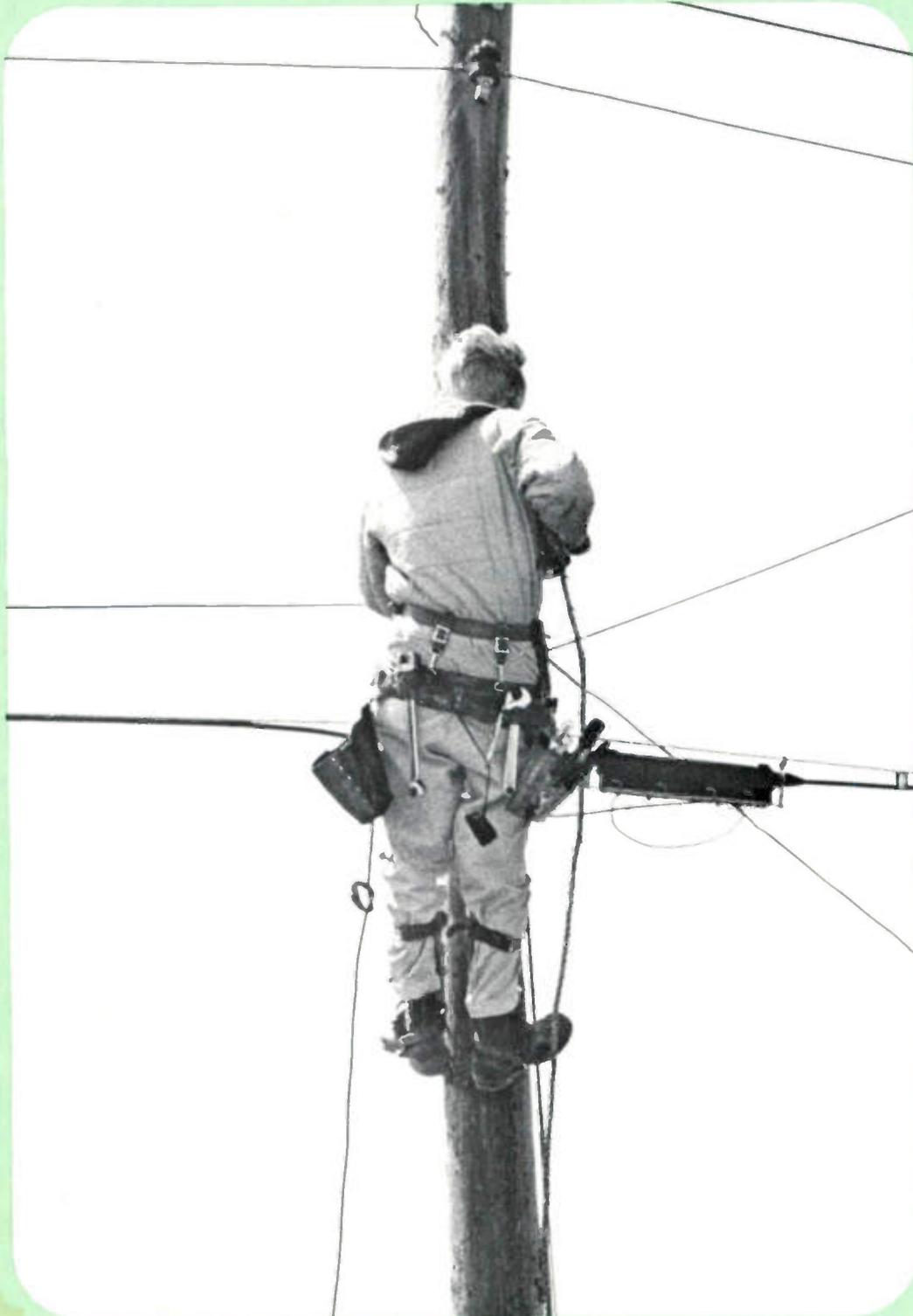
**Parsons and Decaturville, Tenn.** — Construction was scheduled to start recently. The contract, let by Tennessee Telephone Co. to the Comm/Scope Division of Superior Cable, calls for a 400-foot tower and construction of approximately 30 miles of plant.

**North Braddock and Swissvale, Va.** — Eight-channel service has begun, according to Louis Eboli, manager of Suffolk Cable Corp. Offerings also include a weather/music channel.

**Nitro, W. Va.** — Construction has already begun according to Kanawha Cable Television which also has franchises in Dunbar and South Charleston. □

OCTOBER, 1967

# CATV TECHNICIAN



- Comparison of Handend Processing Techniques
- CATV Product Review

General CATV Inc. crewman is shown making house drop on that firm's Milford, Delaware system. Photo courtesy Dryden's Camera Center.

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# Headend Processing: Heterodyne Versus Demodulator-Modulator

By Gaylord G. Rogeness  
Ameco Engineering Corporation

Two techniques which have been used to receive and process television signals before they are applied to the cable system are the Demodulator-Modulator combination and the Heterodyne converter. The intent of this paper is to compare the two techniques.

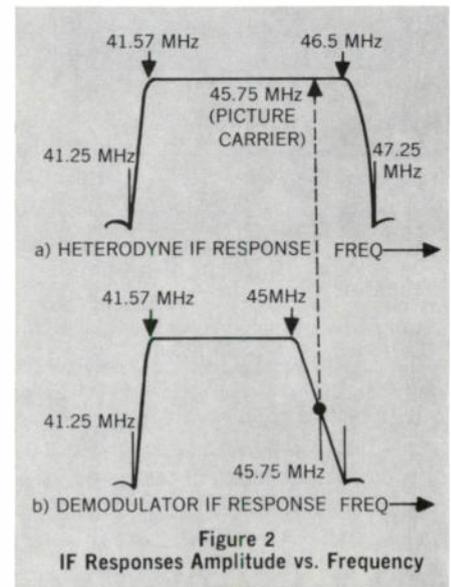
With present day microwave relay equipment, at least one demodulation-modulation is required before the television signal can be applied to the cable system. Hence it is imperative that the demodulator and modulator have characteristics which will minimize distortion of the television signal. However, when the choice between use of a heterodyne converter or a demodulator-modulator pair exists, the heterodyne converter is currently the best choice. Reasons for this choice will be given in this article.

The VHF converter with IF Amplifier, which will be referred to as heterodyne in the remainder of this article, must convert any incoming VHF channel to any desired output VHF channel. The signal received from the antenna must not be degraded during the conversion process. Ideally, one

requirement of the system is a flat passband from 750 kHz below the picture carrier to 4.18 MHz above the picture carrier.

Figure 1 shows a block diagram of the heterodyne. The VHF signal input is amplified by an RF amplifier before it is converted to IF frequencies by the local oscillator in the input mixer. Adjacent channel trapping is accomplished in the IF amplifier. The IF sound carrier is normally separated from the video IF carrier, amplified and limited, then summed with the output of the IF amplifier. This operation allows independent adjustment of the picture carrier to sound carrier level.

The output of the IF amplifier is held at a constant level by AGC action which controls both the RF amplifier and IF amplifier gain. The RF amplifier is normally allowed to operate at maximum gain until the input signal level reaches a point at which the signal-to-noise ratio will not suffer by a reduction in gain. This is known as delayed AGC. The combined IF output is converted to the desired VHF channel by the output local oscillator in the output mixer.



“on channel” conversion is required, the input local oscillator drives the output mixer and the output local oscillator is disabled. Differential gain and differential phase will be almost non-existent, since mixer conversion is not related to modulation percentage.

Two major advantages of the heterodyne over the demodulator-modulator are excellent low frequency phase linearity and no quadrature distortion. Referring to Figure 2a note that the heterodyne IF amplifier amplitude response is flat over the entire video modulation bandwidth. Hence, a linear phase characteristic over this bandwidth is relatively easy to realize. The demodulator IF amplitude response however, is down 6 db at the carrier frequency. A linear phase response is difficult to obtain with this type of amplitude response.

Quadrature distortion, which is discussed in more detail in the next section, is generated when the video signal is detected or demodulated to baseband. Since the heterodyne

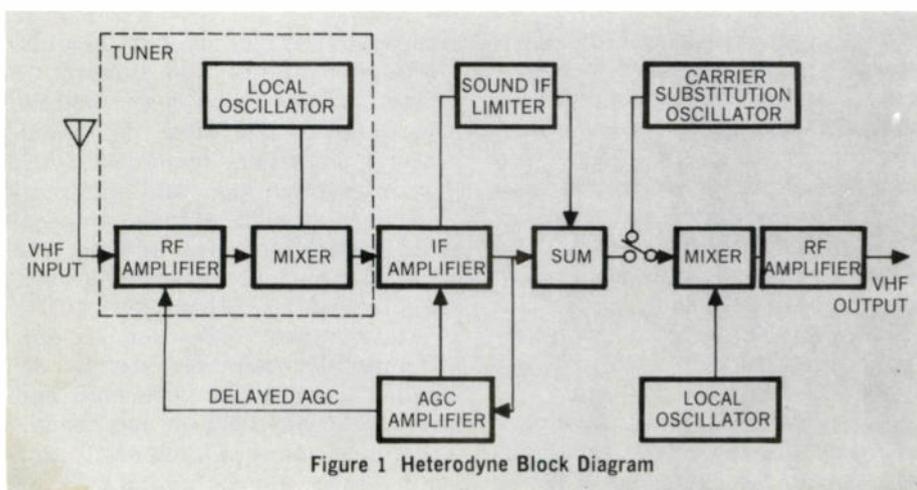


Figure 1 Heterodyne Block Diagram

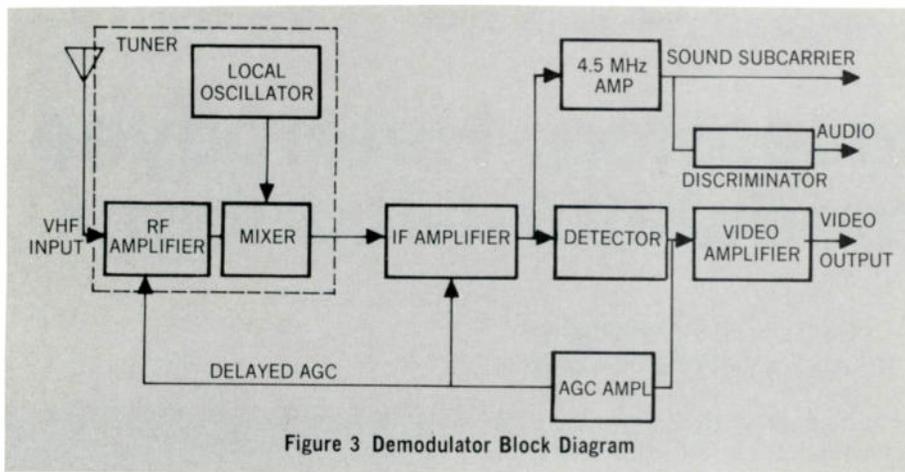


Figure 3 Demodulator Block Diagram

odyne does not detect the video signal, but merely translates the frequency of the video modulated RF signal, no quadrature distortion is generated.

A block diagram of a demodulator is shown in Figure 3. The demodulator receives the incoming VHF television signal, amplifies it, and converts it to an IF frequency for further amplification and filtering. Up to this point, the demodulator and heterodyne are identical. The IF amplifier provides gain before the video modulation of the IF carrier is detected, and finally amplified at baseband video in the video amplifier. The demodulator also provides the audio output either at audio frequency or a 4.5 mhz subcarrier (or both).

The demodulator circuits which have the greatest effects on the video signal, in terms of distortion, are the IF amplifier and the detector. A typical IF amplifier response is shown in Figure 2b. The sound carrier must be trapped out to minimize cross modulation distortion in the detector. This filter operation is difficult to accomplish without introducing amplitude and phase distortion to the color subcarrier and sidebands. Note that the edge of the color subcarrier sidebands extends to 41.57 mhz, only 0.320 mhz from the sound carrier.

Filtering of the sound carrier at IF frequencies is also required in the heterodyne IF amplifier. Hence, both the demodulator and heterodyne are challenged to minimize high frequency phase distortion.

The VHF television signal is transmitted as a vestigial side-

is a standard means of demodulating the IF signal. Differential gain and phase, which are a function of modulation percentage, will be introduced in the detector and can only be minimized. The use of an envelope detector is significant, since the signal being detected has a vestigial sideband characteristic. Vestigial sideband meaning one full sideband and a "vestige" or "part" of the other sideband is transmitted. When a vestigial sideband signal is applied to an envelope detector, an effect similar to low frequency phase

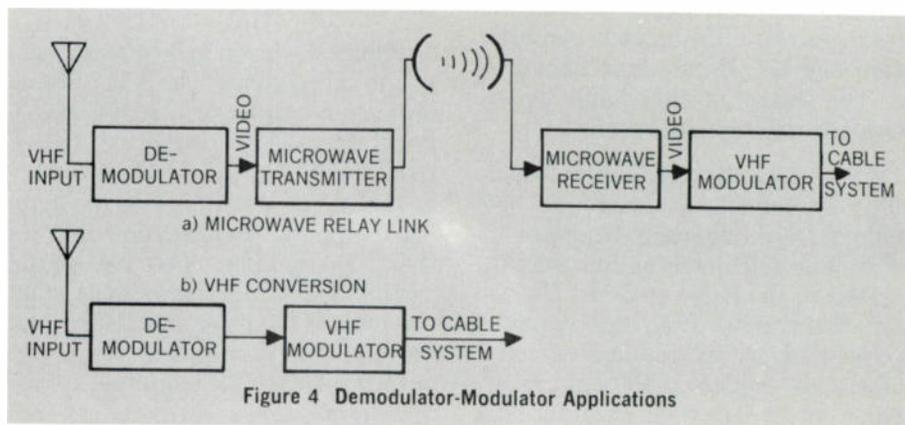


Figure 4 Demodulator-Modulator Applications

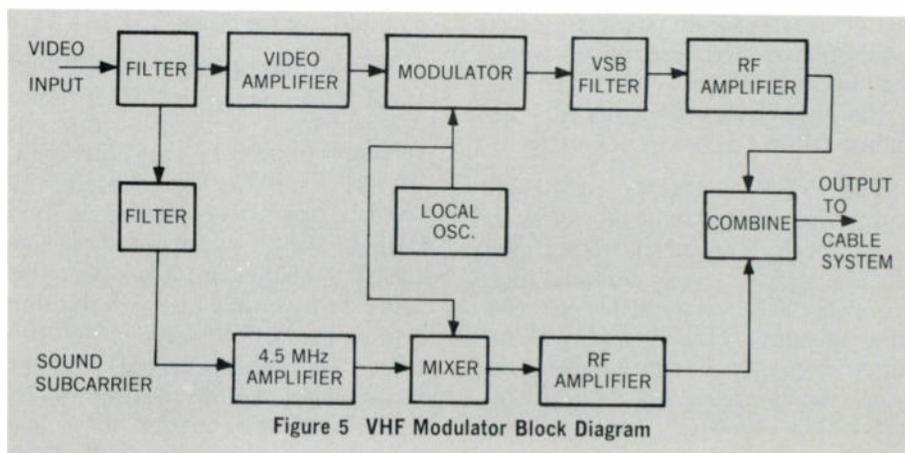


Figure 5 VHF Modulator Block Diagram

band signal. As previously mentioned, the IF response required to produce a constant amplitude detected video signal must attenuate the frequencies near the video carrier which are double sideband. The phase response in this region must therefore be linear so that low frequency phase distortion is minimized. Low frequency phase linearity with the required IF amplitude response poses a difficult design problem.

The video detector produces baseband video from the IF amplifier output. An envelope detector

distortion occurs at low modulation percentages, and quadrature distortion occurs at high modulation percentages (Ref. 1). Quadrature distortion manifests itself as differential gain and differential phase on color signals. Quadrature distortion also affects the transient response, producing overshoots and streaking (Ref. 1,2,3).

In summary, the demodulator IF amplifier must be carefully designed to minimize both high and low frequency phase and amplitude distortion. Differential gain and phase can be minimized by



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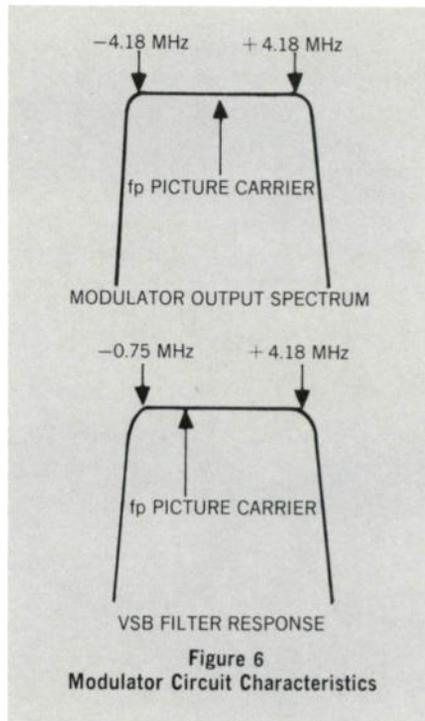
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linearizing the detector. However, quadrature distortion is inherent in a vestigial sideband system utilizing an envelope detector and can only be minimized by utilizing non-standard complicated video processing equipment.

Two applications of the demodulator are shown in Figure 4. In Figure 4a, the demodulator output, baseband video, is used to frequency modulate the microwave carrier of a microwave relay transmitter. The microwave receiver of the relay link then provides baseband video for the cable system. In Figure 4b, baseband video from the demodulator is applied directly to a VHF modulator which drives the cable system. A VHF modulator is therefore required in conjunction with a microwave receiver and also for direct use with a demodulator. The next section discusses VHF modulators.

A VHF modulator block diagram is shown in Figure 5.

Major sources of video signal distortion occur in the heavy outlined blocks in the figure. The modulator transfer characteristic de-



pends upon the modulation percentage utilized. To maintain the highest signal to noise ratio, a high modulation percentage is desirable. However, at high modulation percentages, differential gain

and differential phase occur on the color subcarrier.

For adjacent channel operation, a vestigial sideband (VSB) filter is necessary (reference Figure 6). The VSB filter must be optimized to minimize phase distortion at frequencies near the picture carrier. This is a difficult filter design problem. The phase distortion generated in the VSB filter is usually compensated for in a video phase equalizer.

In Table I, the demodulator-modulator system versus heterodyne system is compared on the basis of video distortion which is difficult to avoid. Item 1, phase nonlinearity near the color subcarrier and sidebands, can be minimized in both systems so as to produce a negligible effect on the picture. However, items 2 thru 4 require complicated video processing equipment with the demodulator-modulator systems if pictures comparable to the heterodyne system are to be consistently provided.

Since the modulator utilizes down modulation, if the broadcast

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program goes off the air, a cw carrier signal to the cable system automatically results. The heterodyne system must provide a separate carrier substitution oscillator for this condition.

The heterodyne system offers the

components are required in the heterodyne.

Because of past and present day performance of these two systems, a subtle advantage for the demodulator-modulator system may be overlooked. A properly designed

tenna. The heterodyne system does not allow complete video processing, since the signal is never below IF frequencies.

When the choice between the two systems is available, the heterodyne presently offers more advantages than the demodulator-modulator system for VHF channel conversion. However, microwave relay links require the use of a demodulator-modulator system. Hence, the problems associated with this system must be minimized to service this application.

DISTORTION	DEMODULATOR	MODULATOR	HETERODYNE
1. PHASE NONLINEARITY NEAR COLOR SUBCARRIER AND SIDEBANDS	SOUND TRAP IN IF AMPLIFIER	VIDEO LOW PASS FILTER	SOUND TRAP IN IF AMPLIFIER
2. LOW FREQUENCY PHASE DISTORTION (DELAY DISTORTION)	IF AMPLIFIER RESPONSE	VESTIGIAL SIDEBAND FILTER	
3. DIFFERENTIAL GAIN AND DIFFERENTIAL PHASE	VIDEO DETECTOR	MODULATOR	
4. QUADRATURE DISTORTION	VIDEO DETECTION OF VESTIGIAL SIDEBAND SIGNAL		

advantage of higher reliability because of the greater number of circuits and components required in the demodulator-modulator system. The probability of component failure is reduced since fewer

demodulator-modulator pair, used in conjunction with the necessary video processing equipment could conceivably produce an output with characteristics better than the signal received from the an-

#### References

1. "Quadrature Distortion Correction for Vestigial Sideband Transmission" by Siegfried Dinsel, presented at SMPTE Technical Conference, November 1-5, 1965.

2. "Transient Response of Detectors in Symmetric and Assymmetric Sideband Systems" by T. Murakami and R. W. Sonnenfeldt, RCA Review, December 1955, pp. 580-610.

3. "Improving the Transient Response of Television Receivers" by Avins, Harris and Horvath, Proc. of IRE, January 1954, pp. 274-284.

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# PRODUCT REVIEW

NEW COMPONENTS FOR CABLE TELEVISION SYSTEMS

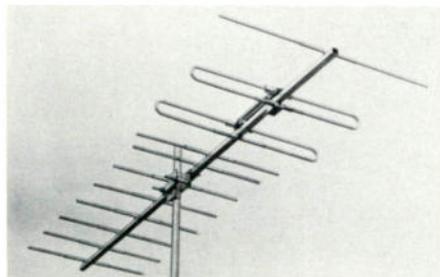
## BENCO HAS NEW LINE GEAR

"Clip-in" multi-tap and line extender plates have been introduced by Benco Television Corporation. Called the Clipper Line, the interchangeable units snap into a weatherproof housing that incorporates Benco's multiple mount. The new clip-in units are said to reduce both investment and operating cost, and simplify system load forecasting. The multi-taps and line extender plates have full bandwidth, including midband, and will pass 10 amperes A. C., according to the manufacturer. Plates are color-coded for fast identification.

For further information on this new product contact Benco Television Corporation, 724 Bugbee Street, Jacksonville, Florida 32207; In Canada, Benco Television Associates, 27 Taber Road, Rexdale, Ontario, Canada.

## JERROLD YAGI ANTENNAS

Jerrold Electronics Corporation has developed a new line of single-channel yagi antennas. The Imperial line comprises two basic models covering the low and high VHF bands and FM. The Super Imperial high-band yagi is said to provide higher performance and gain levels. All models have a direct 75-ohm input connector and new type of re-entry balun which is said to confine unequal currents caused by balanced-to-unbalanced transformation to the inside of the elements. This



has been designed to result in more symmetrical patterns and a greater degree of frequency independence. The antennas feature heavy-duty elements, dual crossarm construction, and vibration dampers designed to reduce wind resonance and the consequent danger of element breakage due

to crystallization and fatigue. The crossarm construction is said to eliminate the need for diagonal support braces and to provide extra strength in both vertical and horizontal planes. The Imperial antennas' shielded phasing line design for coupling multi-driven elements eliminates degradation of performance caused by ice loading, according to the manufacturer. The new Imperial yagis can be stacked by using Jerrold Model 1593A or SHS-2 splitters. Models IRL are for us in the low band, models in the IRH and SIH series for the high band.

For further information on these new products contact CATV Systems Division, Jerrold Electronics Corporation, 401 Walnut Street, Philadelphia, Pa. 19105.

## PREFORMED REDUCING TELETAPE CONNECTOR

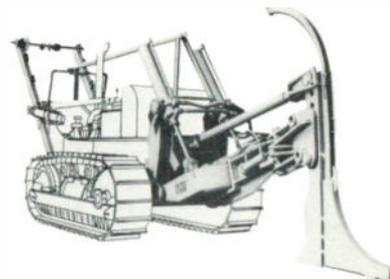
Called "Reducing Teletape Connector," this new product is an L-shaped, helically formed length of double strand wire. The new connector grips only the messenger strands, a feature said to be useful in preventing snow and picture distortion in foam dielectric cable. Reducing Teletape Connectors are applicable to integrated messenger strands with diameters of .063 to .072 inches and .083 inches. They will accommodate feeder messenger strand diameters of 1/4 and 5/16 inches.

For further information contact Preformed Line Products Company, 5349 St. Clair Avenue, Cleveland, Ohio 44103.

## NEW CABLE LAYER

The Kelley cable layer is now available for use with Allis-Chalmers tractors and loaders. The teaming of the Kelley to the AC line provides four new cable layer models for the HD21, HD16, HD11, and HD6. Depths of lay range from the minimum 12 inches with the HD6 to the maximum 72 inches with the HD21. Rates of laying range to four miles an hour in ideal soil conditions, with average production at about one mile per hour, according to the manufacturer. Vertical positioning of the shank is accom-

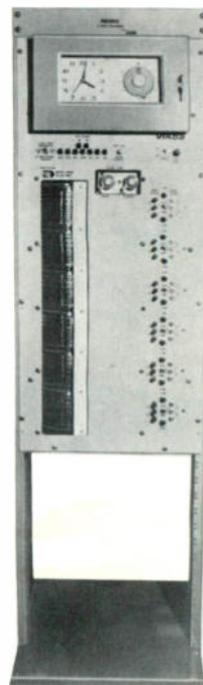
plished with two hydraulic cylinders raising and lowering the tool beam. Lateral movement, also hydraulically-controlled, permits the shank to be offset as much as 24 inches to place cable close to buildings, bridges, roadways and other structures. A variety of steel shanks are offered to match specific cable sizes, types and specifications.



For more information on this product contact Kelley Products, P.O. Box 3227, Houston, Texas 77001.

## NON-DUPLICATING SWITCHER

A new non-duplicating CATV switcher has been introduced by Vikoa, Inc. The manufacturer states that the 12-channel unit, named Duplomat, makes it easy for CATV operators to comply with FCC non-duplication requirements. It requires setting only once a week, storing information for seven days and providing switching at 15 minute intervals. Accuracy of timing is



said to be assured by a heavy duty synchronous motor controlled by a synchronous electric clock motor. However, in case of a power failure, a

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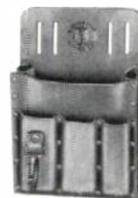
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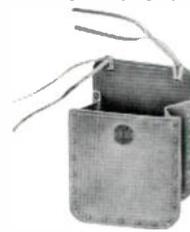
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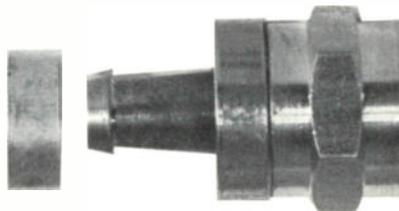
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mechanical clock mechanism takes over. When power is restored, a "catch-up" mechanism moves the entire system into the correct position, performing all missed functions. Each day is divided into 15 minute segments by a group of clearly marked holes. Insertion of metal plugs into the proper holes programs the switcher for automatic operation.

For further information on this new product contact Vikoa Inc., 400 Ninth Street, Hoboken, New Jersey.

### "F" CONNECTORS FROM AVA

AVA Electronics & Machine Corp. of Upper Darby, Pa. has added F-59, F-59A, F-56, F-61 and F-81 CATV connectors to their line. AVA will warehouse quantities for immediate delivery. New catalog sheet on "F" connector available.



For further information on this new product contact AVA Electronics and Machine Corp., 416 Long Lane, Upper Darby, Pa. 19082.

### MATCHING TRANSFORMER

A broadband 50-75 ohm matching transformer, which uses ferrite transmission line techniques to permit its use over the range from 10 to 1500 Mc, is available from A/R-Anzac Electronics Co. The TPX-75 Transpad coaxial matching transformer has a 50 ohm unbalanced input and 75 ohm unbalanced output, according to the manufacturer. It is designed to allow conversion and matching of 50 ohm equipment to 75 ohm systems with elimination of most of the 6 dB loss said to be typical. Maximum loss is given as 0.3 dB from 50 to 500 Mc and 0.6 dB maximum loss over the specified 10 to 1500 Mc range. VSWR of the TPX-75 matching transformer is given as 1.2 to 1 (maximum). Power input is 2 watts.

For further information on this new product contact A/R-Anzac Electronics Co., 121 Water Street, Norwalk, Connecticut 06854.

### RF SIGNAL CONVERTER

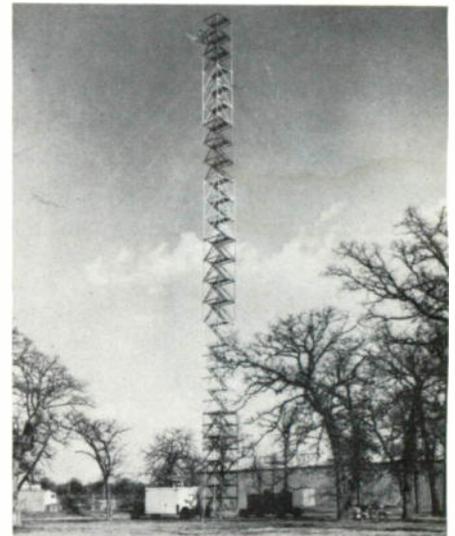
A new battery-powered, solid-state RF signal converter for signal measurements in the 5 to 54 MHz band has been announced by Blonder-

Tongue Laboratories, Inc. The new model, designated Model 4132, mounts on top of the Blonder-Tongue FSM-2 and when used in conjunction with it, it is said to make accurate signal strength measurements of television sub-channels and other frequencies in the 5 to 54 MHz band. The output frequency of the converter is always 100 MHz above the incoming frequency therefore, output signals will fall between 105 and 154 MHz with input signals between 5 to 54 MHz, according to the manufacturer. The unit measures 12" x 2 1/2" x 5 1/4", weighs 3.75 lbs. and is powered by a nine-volt battery.

For further information on this product contact Blonder-Tongue Labs, Inc., 9 Alling Street, Newark, New Jersey, 07102.

### NEW TOWERS FROM ASTRO STRUCTURES

A series of 12 lightweight aluminum scaffold towers which consist of easily erected sections six-feet square and six-feet high is available from Astro Structures, Inc., subsidiary of RF Systems, Inc. The X-2 aluminum scaffold towers provide heights from 48 to 300 feet with an internal stairway and



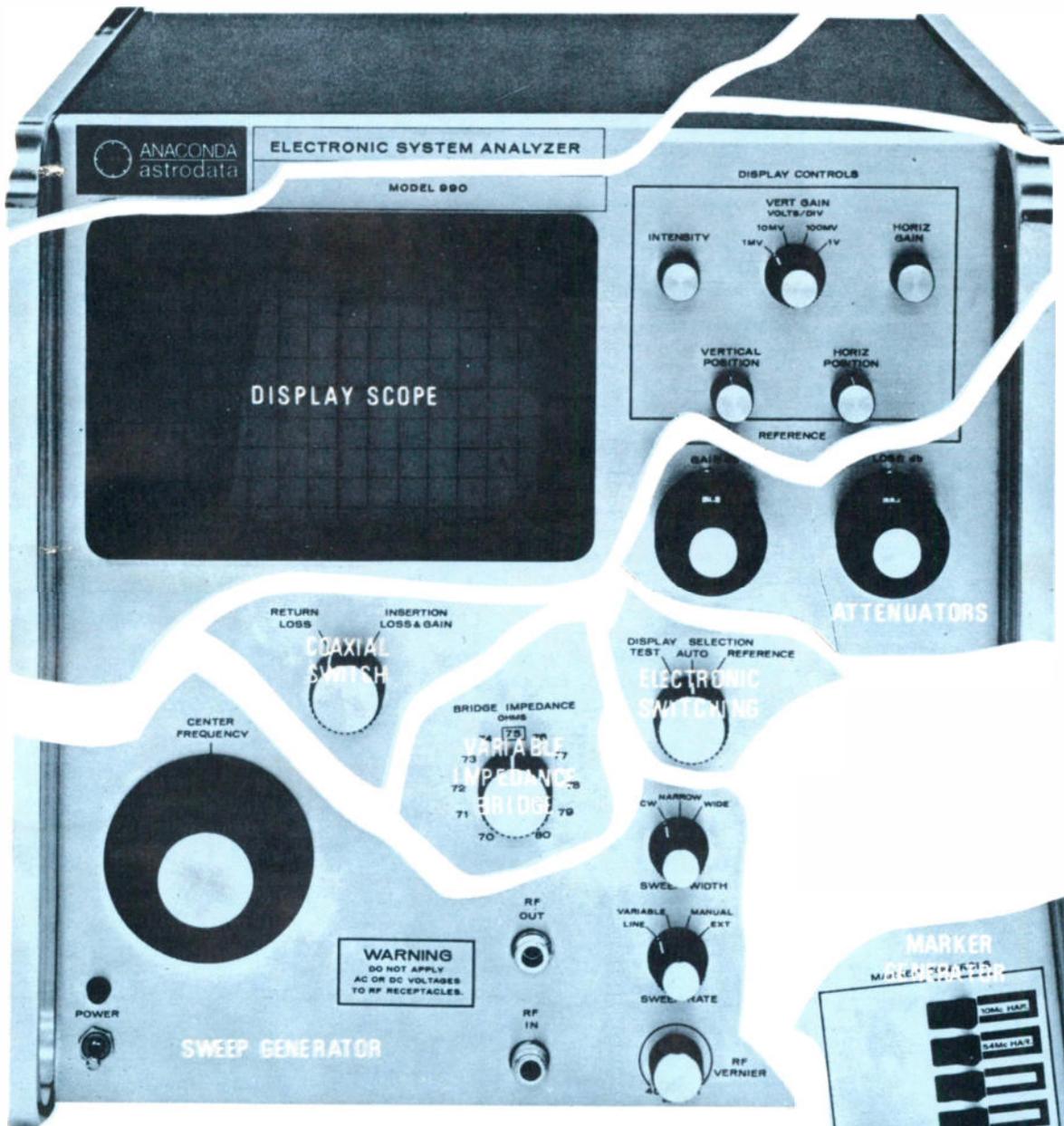
rest platforms every 6 feet for convenience of users who do not appreciate "outside climbing."

The company also recently announced production of their new EH aluminum crank-up tower. This tower is said to be light and adaptable for field use. One section nests inside the other to make a compact unit which cranks up from the outside-in. Available heights range from 12 to 82 feet.

For further information on these new products contact Astro Structures, Inc., 220 Demeter St., P.O. Box 999, Palo Alto, California 94302.

# MEASUREMENT SET-UPS A PUZZLE??

Tired of looking for jumpers?

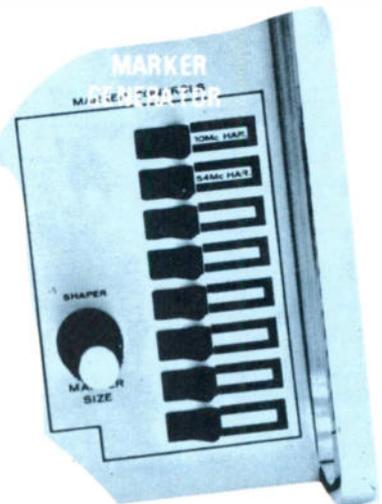


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Reply to Dept. \_\_\_\_\_, TV Communications, 207 N.E. 38th, Oklahoma City, Okla.

Rate for classifieds is 25 cents per word for advertising obviously of a non-commercial nature. Add \$1.00 for Box Number and reply service, per issue. Advance payment is required; minimum order is \$4.00. Classified rate to commercial advertisers is \$30.00 per column inch (2 1/4" col.). Deadline for all classifieds is 1st of preceding month.

### FOR SALE

New and Used CATV Equipment. Includes head-end equipment, line amplifiers and ALC controls, power supplies, line equipment and accessories manufactured by Benco, Jerrold, SKL, EMI, HECO and SOLA. Write for complete list to TRANSVISION SHERBROOKE, 1270 Belvedere, So., Sherbrooke, Quebec, Canada, attn: Mr. Giguere or phone: 819/569-6371.

### GROUP OWNERS

Keep your system managers and technicians informed about progress in CATV . . . Subscribe for them to TV Communications, as little as \$4.67 each per year for twenty or more. Write TV Communications.

### FOR SALE

50,000 connectors SO-239, PL-259, F-59, F-61. Also cable assemblies. Manufacturer's overstock. AVA Electronics & Machine Corp., Box 224, Upper Darby, Pa. 19082.

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**TV Communications**

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### WANTED—CATV TECHNICIAN

Medium size system in Midwest has opening for technician or chief technician qualified for normal tower/bench/maintenance/connection work. Microwave experience desirable but not essential. Send experience, salary requirements, in strict confidence, to Dept. T101, TV Communications.

### FOR SALE

Fully engineered CATV system — ready for construction — and three franchises Los Angeles area. Reply Dept. T103, TV Communications.

### TOWER ERECTION — SYSTEM CONSTRUCTION

Need a system constructed in North Central area? See ad on page 68 J.H.B. Construction.

### CONSTRUCTION MEN

Top quality men needed at all levels of CATV construction. Send written resume to Matador Construction, Inc., 5471 San Fernando Road, W., Glendale, California 91203.

### HELP WANTED

Installer-Repairman for new system now under construction on Gulf Coast. Write: Coast TV Cable, Inc., 114 So. Columbus Ave., Louisville, Miss. 39339.

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### TELEPHONE ENGINEERS AND TECHNICIANS

Long established consulting engineering firm needs design and field engineers and technicians experienced in aerial and buried cable REA telephone construction. Must have ability to hand letter and draw basic sketches. Younger men with neat appearance and good human relations ability preferred. C. H. Guernsey & Co., Box 53247, Oklahoma City, Okla. 73105. Phone 405/525-2366.

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If you are interested in a challenging Field Engineering position and can meet the following requirements:

1. have three or more years of experience as a CATV system technician
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Job requires extensive travel out of home office area. Send resume to: Dept. T102,

**TV Communications**

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Excellent opportunity with subsidiary of NYSE Company located in FLORIDA for individual with broadcasting engineering background in Community Antenna Television-200 mile system. Experience should include knowledge of head-end and systems maintenance including antenna orientation and channel master maintenance, systems maintenance which would include sweeping, amplifiers and their repair.

Would be responsible for direction and supervision of 12 employees. Excellent benefits. Salary commensurate with background. Send detailed resume with salary requirements in confidence to:

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Jerrold's new Channel Commander II has everything you would look for in a solid-state single-channel processing unit—and then some. For vivid color, for superb black-and-white TV at every subscriber location, start with Commander II's at your head-end.

This completely modularized head-end unit processes and controls any single VHF input channel (2 through 13) and delivers it either as any standard VHF channel (including the original input channel) or as any special VHF channel required by a 20-channel distribution system. Spurious beats are at least 60 db down. Fast-acting IF AGC is keyed to horizontal sync reference. Oscillators are 100% crystal-controlled. Completely compatible with any CATV system head-

end, Commander II also features modular construction for easy maintenance and all solid-state circuitry for reliable, economical operation.

Commander II's compact modular construction includes five active modules, only one of which (either the input or the output module) needs to be replaced to change functions. The whole unit takes up only  $5\frac{1}{4}$ " of vertical rack space when mounted in a standard 19" rack.

New Commander II's will be rolling off production lines in December. Get your order in now to insure early delivery. Write or call CATV Systems Division, Jerrold Electronics Corporation, 401 Walnut Street, Philadelphia, Pennsylvania 19105. Phone 215-925-9870.

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